FIGURE 1

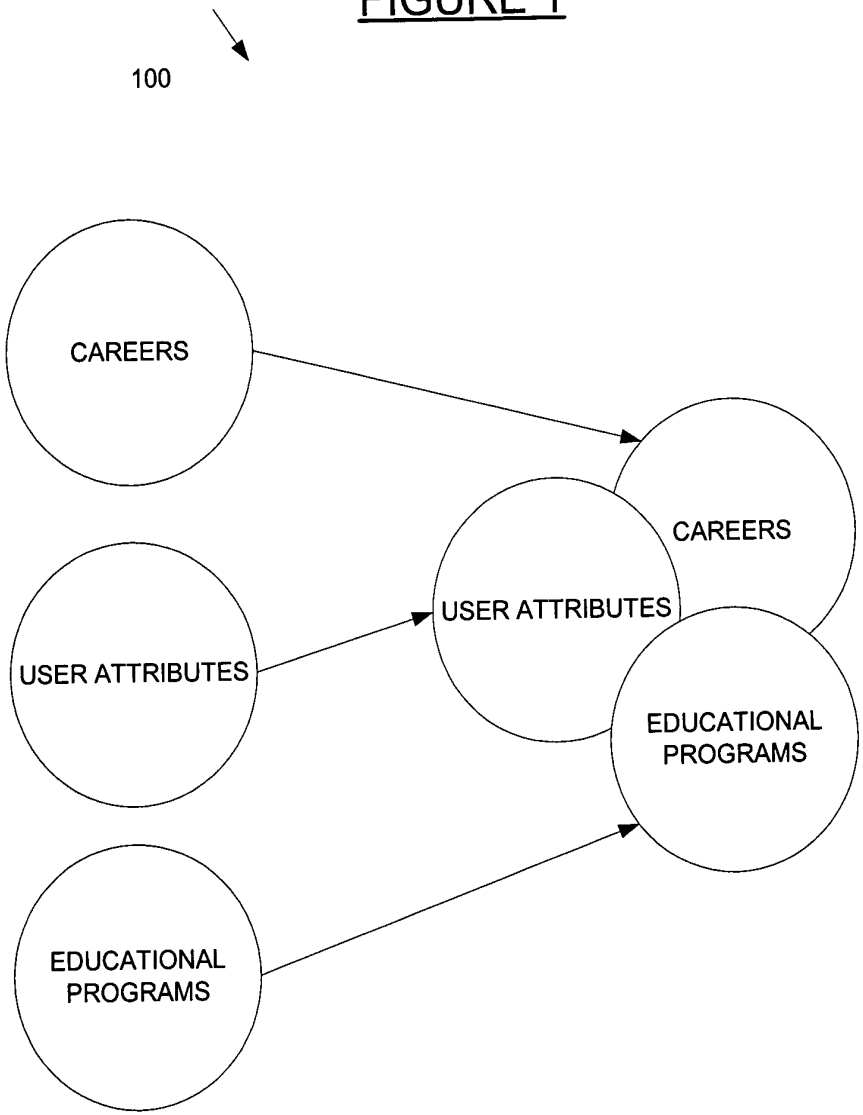

100
CAREERS
USER ATTRIBUTES
EDUCATIONAL PROGRAMS
CAREERS
USER ATTRIBUTES
EDUCATIONAL PROGRAMS

FIGURE 2A

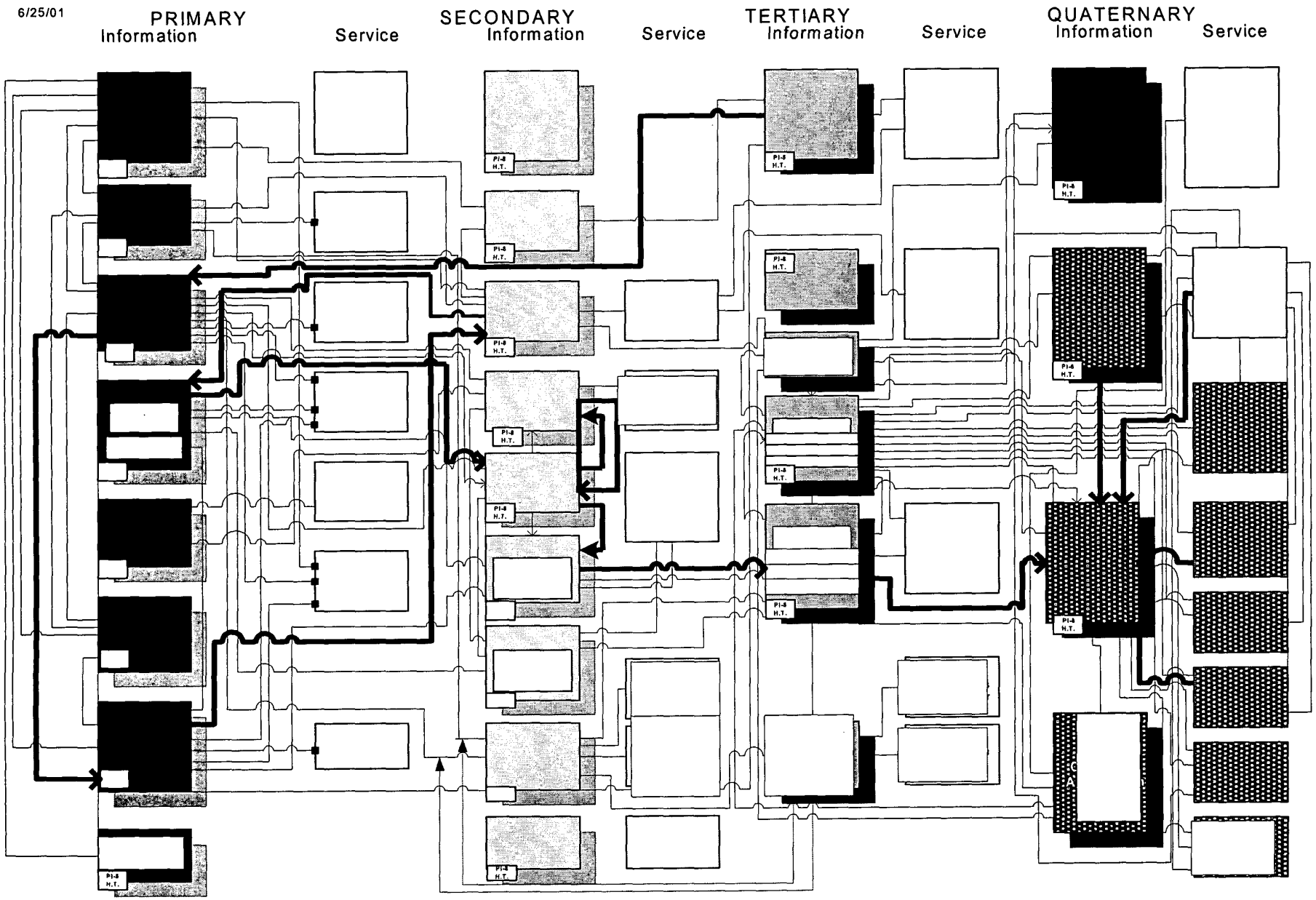

205
210
215
220
6/25/01
PRIMARY
Information
Service
SECONDARY
Information
Service
TERTIARY
Information
Service
QUATERNARY
Information
Service

FIGURE 2B

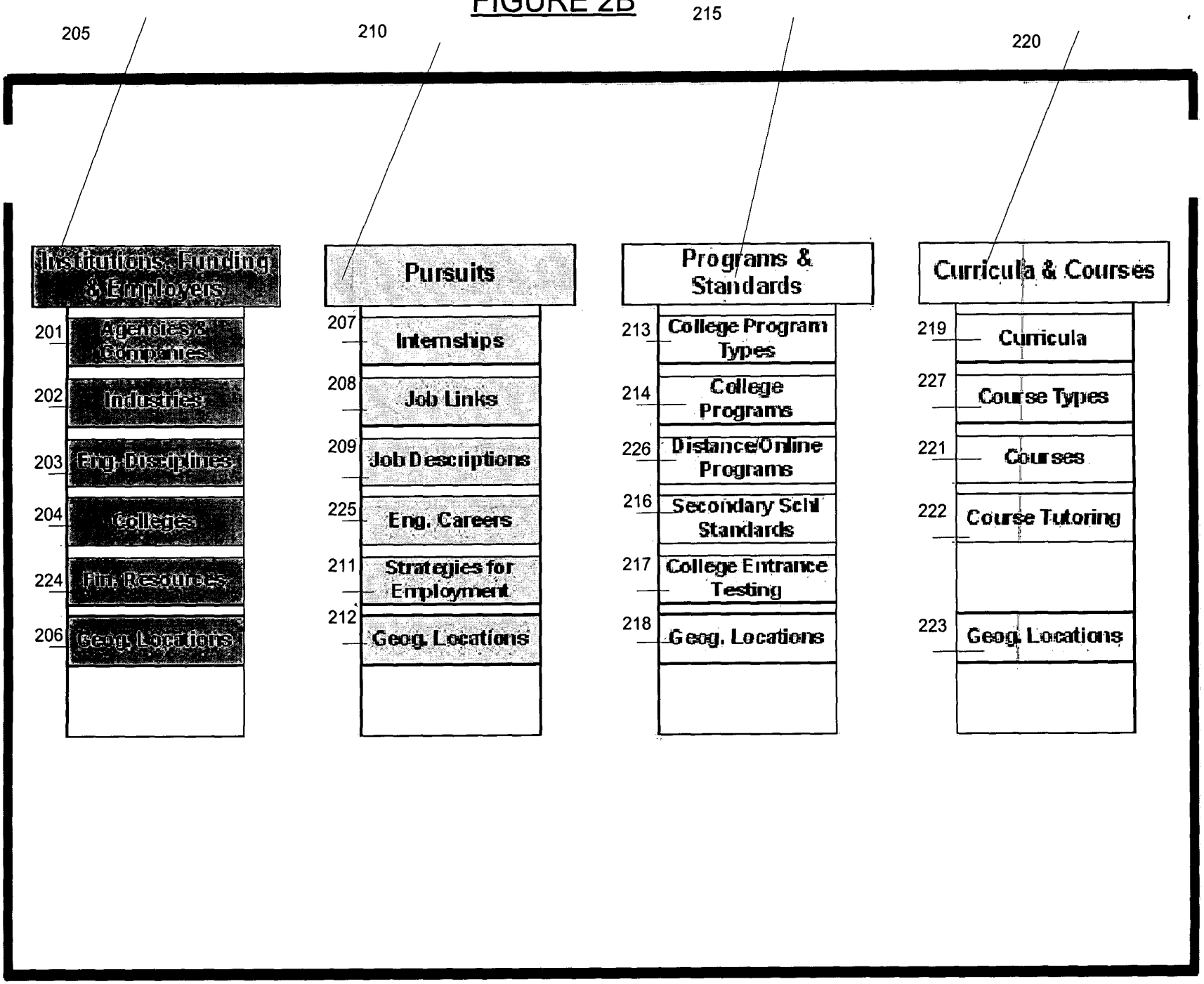

205
210
215
220
Institutions, Funding & Employers
201 Agencies & Companies
202 Industries
203 Eng. Disciplines
204 Colleges
224 Fin. Resources
206 Geog. Locations
Pursuits
207 Internships
208 Job Links
209 Job Descriptions
225 Eng. Careers
211 Strategies for Employment
212 Geog. Locations
Programs & Standards
213 College Program Types
214 College Programs
226 Distance/Online Programs
216 Secondary Schl Standards
217 College Entrance Testing
218 Geog. Locations
Curricula & Courses
219 Curricula
227 Course Types
221 Courses
222 Course Tutoring
223 Geog. Locations

FIGURE 2C

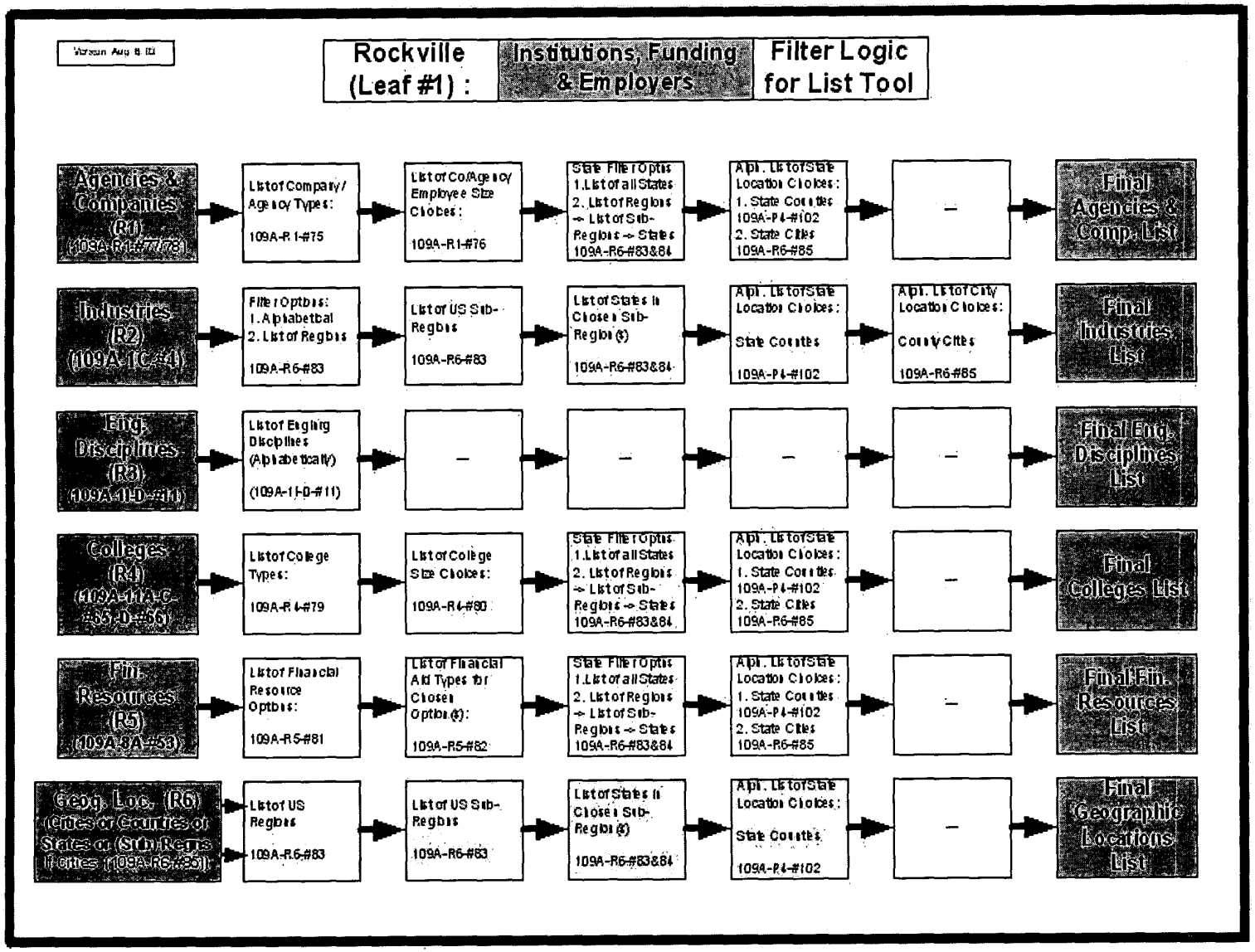

Rockville (Leaf #1) :
Institutions, Funding & Employers
Filter Logic for List Tool
Agencies & Companies (R1) (109A-R1-#77,78)
List of Company/ Agency Types: 109A-R1-#75
List of Co/Agency Employee Size Choices: 109A-R1-#76
State Filter Opts: 1. List of all States 2. List of Regions -> List of Sub-Regions -> States 109A-R6-#83&84
Apt. List of State Location Choices: 1. State Counties 109A-P4-#102 2. State Cities 109A-R6-#85
–
Final Agencies & Comp. List
Industries (R2) (109A-1C-#4)
Filter Opts: 1. Alphabetical 2. List of Regions 109A-R6-#83
List of US Sub-Regions 109A-R6-#83
List of States in Chosen Sub-Region(s) 109A-R6-#83&84
Apt. List of State Location Choices: State Counties 109A-P4-#102
Apt. List of City Location Choices: County Cities 109A-R6-#85
Final Industries List
Eng. Disciplines (R3) (109A-1D-#11)
List of Engring Disciplines (Alphabetically) (109A-1D-#11)
–
–
–
–
Final Eng. Disciplines List
Colleges (R4) (109A-1A-C-#65-D-#56)
List of College Types: 109A-R4-#79
List of College Size Choices: 109A-R4-#80
State Filter Opts: 1. List of all States 2. List of Regions -> List of Sub-Regions -> States 109A-R6-#83&84
Apt. List of State Location Choices: 1. State Counties 109A-P4-#102 2. State Cities 109A-R6-#85
–
Final Colleges List
Fin. Resources (R5) (109A-8A-#53)
List of Financial Resource Opts: 109A-R5-#81
List of Financial Aid Types for Chosen Option(s): 109A-R5-#82
State Filter Opts: 1. List of all States 2. List of Regions -> List of Sub-Regions -> States 109A-R6-#83&84
Apt. List of State Location Choices: 1. State Counties 109A-P4-#102 2. State Cities 109A-R6-#85
–
Final Fin. Resources List
Geog. Loc. (R6) (Cities or Counties of States or (Sub-Regs if Cities (109A-R6-#83))
List of US Regions 109A-R6-#83
List of US Sub-Regions 109A-R6-#83
List of States in Chosen Sub-Region(s) 109A-R6-#83&84
Apt. List of State Location Choices: State Counties 109A-P4-#102
–
Final Geographic Locations List

FIGURE 2D

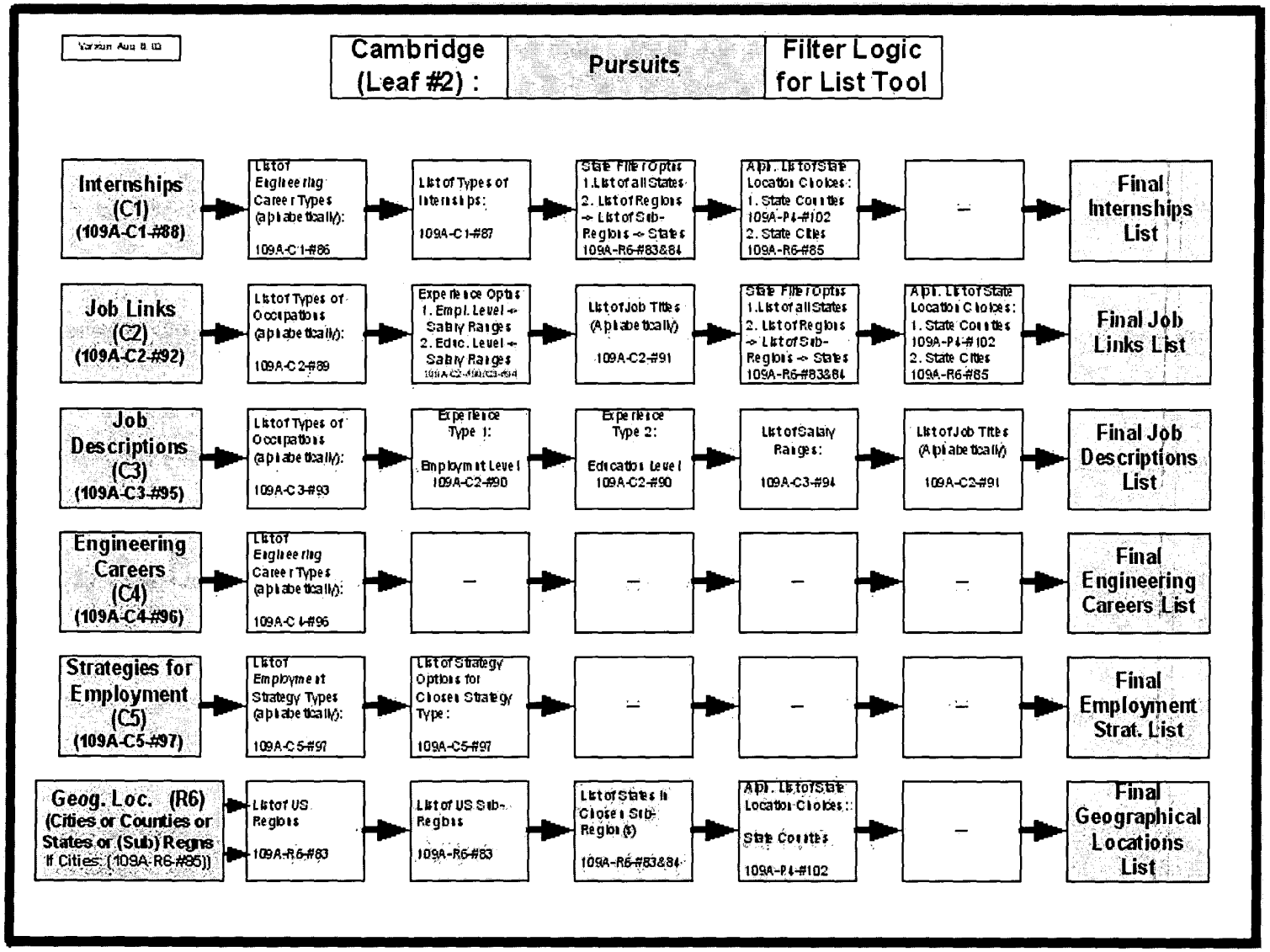

Version Aug 8 03
Cambridge (Leaf #2) :
Pursuits
Filter Logic for List Tool
Internships (C1) (109A-C1-#88)
List of Engineering Career Types (alphabetically): 109A-C1-#86
List of Types of Internships: 109A-C1-#87
State Filter Optns: 1. List of all States 2. List of Regions -> List of Sub-Regions -> States 109A-R6-#83&84
Appl. List of State Location Choices: 1. State Counties 109A-P4-#102 2. State Cities 109A-R6-#85
–
Final Internships List
Job Links (C2) (109A-C2-#92)
List of Types of Occupations (alphabetically): 109A-C2-#89
Experience Optns: 1. Empl. Level -> Salary Ranges 2. Educ. Level -> Salary Ranges
List of Job Titles (Alphabetically) 109A-C2-#91
State Filter Optns: 1. List of all States 2. List of Regions -> List of Sub-Regions -> States 109A-R6-#83&84
Appl. List of State Location Choices: 1. State Counties 109A-P4-#102 2. State Cities 109A-R6-#85
Final Job Links List
Job Descriptions (C3) (109A-C3-#95)
List of Types of Occupations (alphabetically): 109A-C3-#93
Experience Type 1: Employment Level 109A-C2-#90
Experience Type 2: Education Level 109A-C2-#90
List of Salary Ranges: 109A-C3-#94
List of Job Titles (Alphabetically) 109A-C2-#91
Final Job Descriptions List
Engineering Careers (C4) (109A-C4-#96)
List of Engineering Career Types (alphabetically): 109A-C4-#96
–
Final Engineering Careers List
Strategies for Employment (C5) (109A-C5-#97)
List of Employment Strategy Types (alphabetically): 109A-C5-#97
List of Strategy Options for Chosen Strategy Type: 109A-C5-#97
Final Employment Strat. List
Geog. Loc. (R6) (Cities or Counties or States or (Sub) Regns If Cities: (109A-R6-#85))
List of US Regions 109A-R6-#83
List of US Sub-Regions 109A-R6-#83
List of States in Chosen Sub-Region(s) 109A-R6-#83&84
Appl. List of State Location Choices: State Counties 109A-P4-#102
Final Geographical Locations List

FIGURE 2E

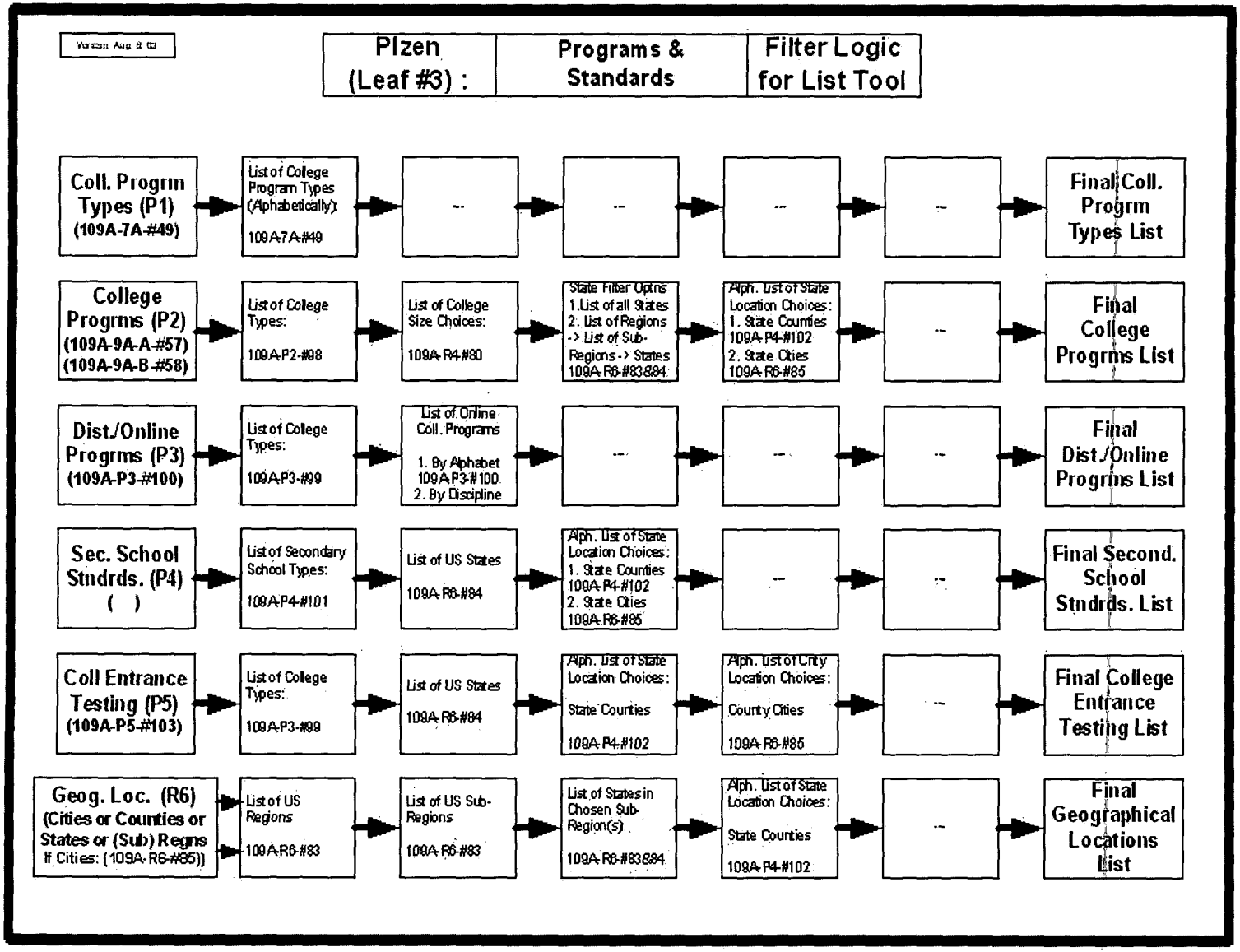

Version Aug 8 03
Plzen (Leaf #3) :
Programs & Standards
Filter Logic for List Tool
Coll. Progrm Types (P1) (109A-7A-#49)
List of College Program Types (Alphabetically): 109A-7A-#49
--
--
--
--
Final Coll. Progrm Types List
College Progrms (P2) (109A-9A-A-#57) (109A-9A-B-#58)
List of College Types: 109A-P2-#98
List of College Size Choices: 109A-R4-#80
State Filter Optns 1.List of all States 2. List of Regions -> List of Sub-Regions -> States 109A-R6-#83&84
Alph. List of State Location Choices: 1. State Counties 109A-P4-#102 2. State Cities 109A-R6-#85
--
Final College Progrms List
Dist./Online Progrms (P3) (109A-P3-#100)
List of College Types: 109A-P3-#99
List of Online Coll. Programs 1. By Alphabet 109A-P3-#100 2. By Discipline
--
--
--
Final Dist./Online Progrms List
Sec. School Stndrds. (P4) ( )
List of Secondary School Types: 109A-P4-#101
List of US States 109A-R6-#84
Alph. List of State Location Choices: 1. State Counties 109A-P4-#102 2. State Cities 109A-R6-#85
--
--
Final Second. School Stndrds. List
Coll Entrance Testing (P5) (109A-P5-#103)
List of College Types: 109A-P3-#99
List of US States 109A-R6-#84
Alph. List of State Location Choices: State Counties 109A-P4-#102
Alph. List of City Location Choices: County Cities 109A-R6-#85
--
Final College Entrance Testing List
Geog. Loc. (R6) (Cities or Counties or States or (Sub) Regns If Cities: (109A-R6-#85))
List of US Regions 109A-R6-#83
List of US Sub-Regions 109A-R6-#83
List of States in Chosen Sub-Region(s) 109A-R6-#83&84
Alph. List of State Location Choices: State Counties 109A-P4-#102
--
Final Geographical Locations List

FIGURE 2F

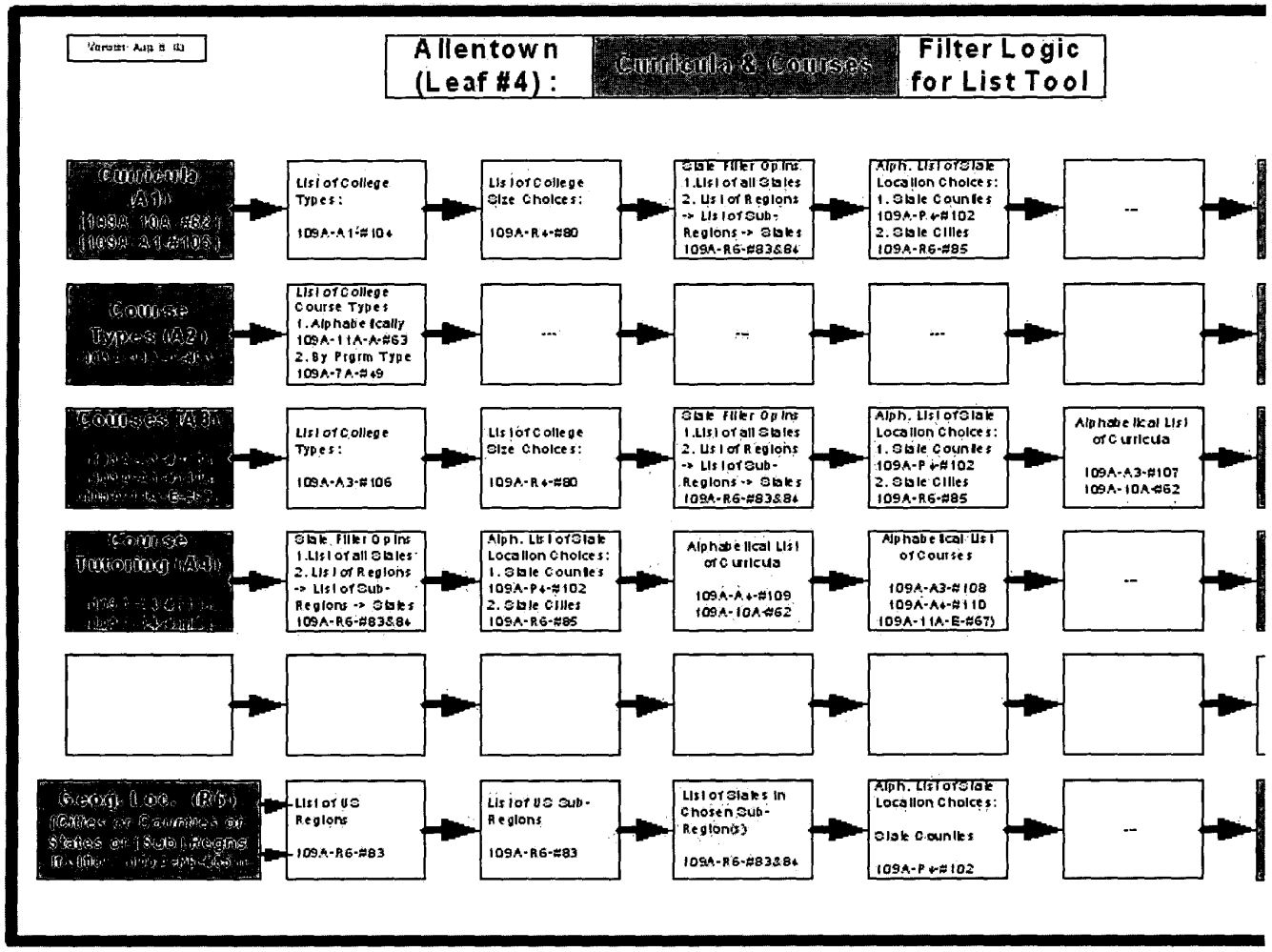

Allentown (Leaf #4):
Curricula & Courses
Filter Logic for List Tool
List of College Types:
109A-A1-#104
List of College Size Choices:
109A-R4-#80
State Filter Opins:
1. List of all States
2. List of Regions -> List of Sub-Regions -> States
109A-R6-#83&84
Alph. List of State Location Choices:
1. State Counties
109A-P4-#102
2. State Cities
109A-R6-#85
List of College Course Types
1. Alphabetically
109A-11A-A-#63
2. By Prgrm Type
109A-7A-#49
List of College Types:
109A-A3-#106
Alphabetical List of Curricula
109A-A3-#107
109A-10A-#62
State Filter Opins:
1. List of all States
2. List of Regions -> List of Sub-Regions -> States
109A-R6-#83&84
Alph. List of State Location Choices:
1. State Counties
109A-P4-#102
2. State Cities
109A-R6-#85
Alphabetical List of Curricula
109A-A4-#109
109A-10A-#62
Alphabetical List of Courses
109A-A3-#108
109A-A4-#110
109A-11A-E-#67)
List of US Regions
109A-R6-#83
List of US Sub-Regions
109A-R6-#83
List of States in Chosen Sub-Region(s)
109A-R6-#83&84
Alph. List of State Location Choices:
State Counties
109A-P4-#102

FIGURE 2G

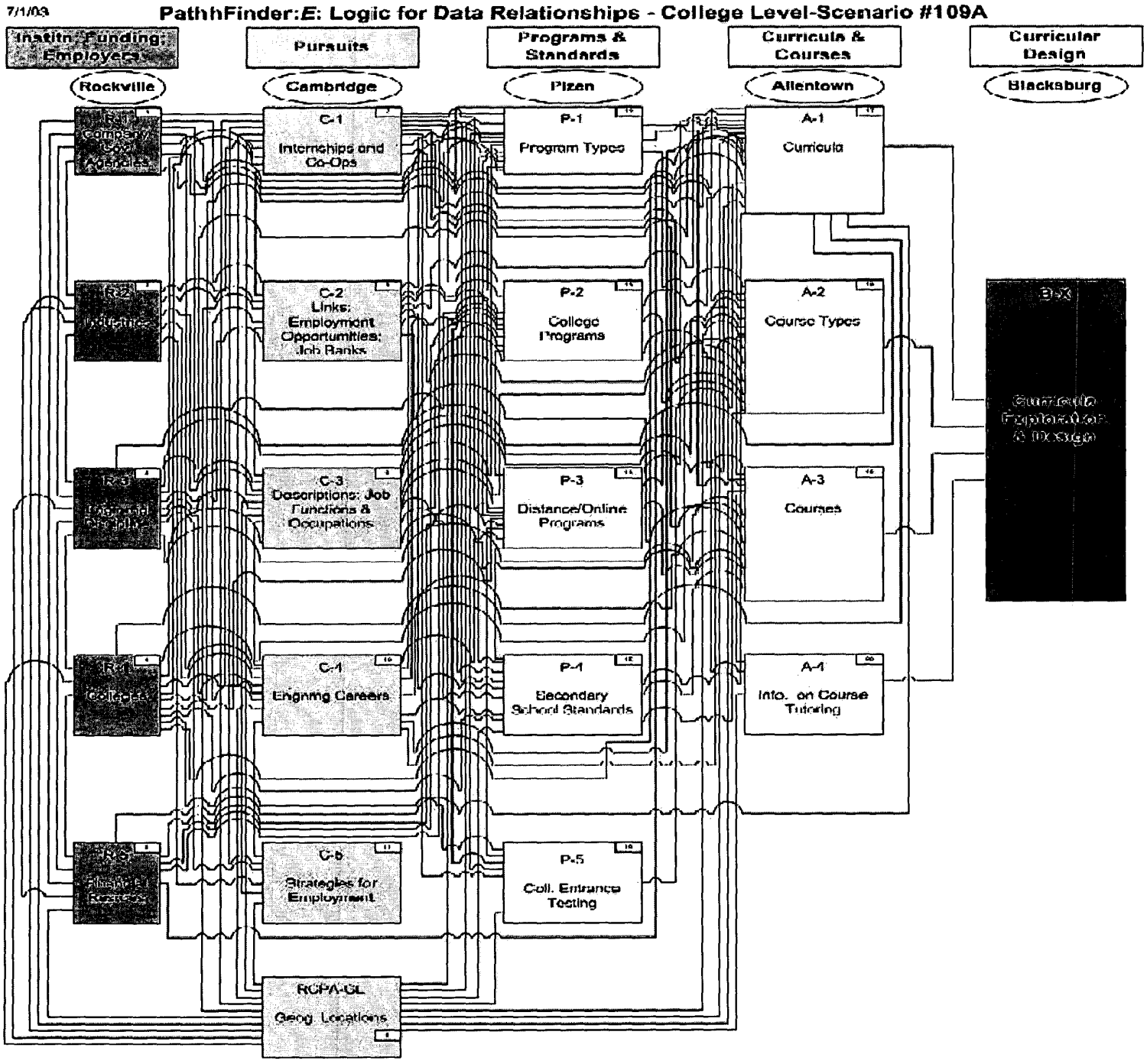

7/1/03
PathhFinder:E: Logic for Data Relationships - College Level-Scenario #109A
Institn; Funding; Employers
Pursuits
Programs & Standards
Curricula & Courses
Curricular Design
Rockville
Cambridge
Pizen
Allentown
Blacksburg
C-1
Internships and Co-Ops
C-2
Links: Employment Opportunities; Job Banks
C-3
Descriptions: Job Functions & Occupations
C-4
Engrng Careers
C-5
Strategies for Employment
RCPA-GL
Geog Locations
P-1
Program Types
P-2
College Programs
P-3
Distance/Online Programs
P-4
Secondary School Standards
P-5
Coll. Entrance Testing
A-1
Curricula
A-2
Course Types
A-3
Courses
A-4
Info. on Course Tutoring
D-X

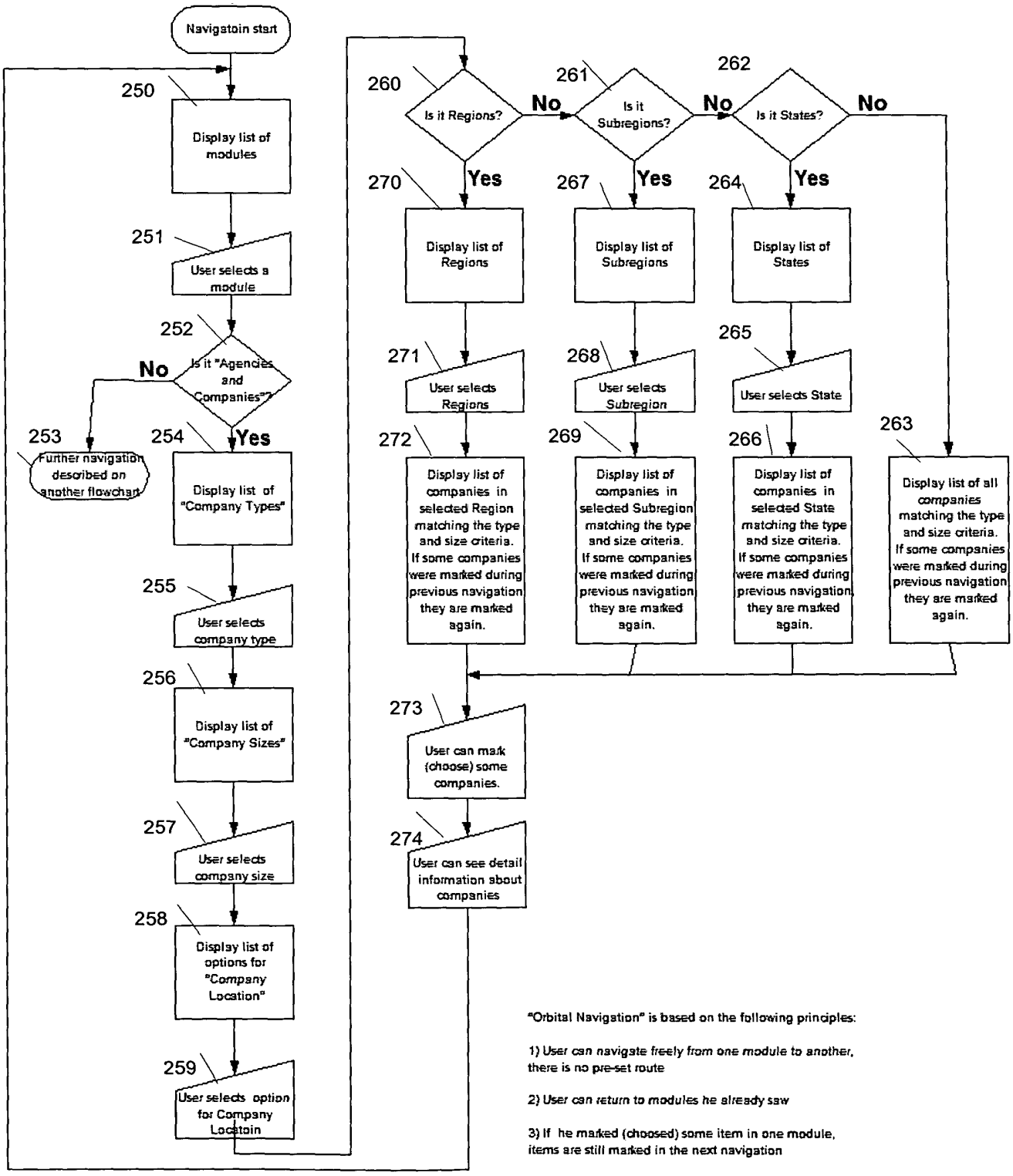
FIGURE 2H

Inter-Module Data Relationship Connections						
Module Number	Module Code	Module Designation	List Available?	Content Available for List Item(s)?	Other Modules Data-Connected to Current Module	Total # of Relational Connections
1	R1	Agencies & Companies			R2,R3,R5,RCPA-GL,C1,C2,C3,C4,P1,A1,A2	11
2	R2	Industries			R1,R3,R5,RCPA-GL,C1,C2,C3,C4,C5	9
3	R3	Engineering Disciplines			R1,R2,R4,R5,RCPA-GL,C1,C2,C3,C4,C5,A1,A2,A3	13
4	R4	Colleges			R3,R5,RCPA-GL,C1,C3,P1,P2,P3,P4,P5,A1,A2	12
5	R5	Financial Resources			R1,R2,R3,R4,RCPA-GL,P1,P2,P3,A1	9
6	RCPA-GL	Geographical Locations			R1,R2,R3,R4,R5,C1,C2,C3,C4,C5,P1,P2,P4,A1,A2,A3,A4	17
7	C1	Internships			R1,R2,R3,R4,RCPA-GL,C2,C3,C4,C5,P1,P2,P3,P4,P5,A1,A2,A3	17
8	C2	Job Links			R1,R2,R3,RCPA-GL,C1,C3,C4,P1,P2,P3,P4,A1,A2,A3	14
9	C3	Job Descriptions			R1,R2,R3,R4,RCPA-GL,C1,C2,C4,C5,P1,P2,P3,P4,A1,A2,A3	16
10	C4	Enginering Careers			R1,R2,R3,RCPA-GL,C1,C2,C3,C5,P1,P2,P3,P4,A1,A2,A3	15
11	C5	Strategies for Employment			R2,R3,RCPA-GL,C1,C3,C4	6
12	P1	College Program Types			R1,R4,R5,RCPA-GL,C1,C2,C3,C4,P2,P3,P4,P5,A1,A2,A3	15
13	P2	College Programs			R4,R5,RCPA-GL,C1,C2,C3,C4,P1,P3,P4,P5,A1,A2,A3	14
14	P3	Distance/Online Programs			R4,R5,C1,C2,C3,C4,P1,P2,P4,P5,A1,A2,A3	13
15	P4	Secondary School Standards			R4,RCPA-GL,C1,C2,C3,C4,P1,P2,P3,A1,A2,A3	12
16	P5	College Entrance Testing			R4,C1,P1,P2,P3,A1	6
17	A1	Curricula			R1,R3,R4,R5,RCPA-GL,C1,C2,C3,C4,P1,P2,P3,P4,P5,A2,A3	16
18	A2	Course Types			R1,R3,R4,RCPA-GL,C1,C2,C3,C4,P1,P2,P3,P4,A1,A3,A4	15
19	A3	Courses			R3,RCPA-GL,C1,C2,C3,C4,P1,P2,P3,P4,A1,A2,A4	13
20	A4	Course Tutoring			RCPA-GL,A2,A3	3
					TOTAL # OF CONNECTION NODES	246
					TOTAL # OF DISTINCT 2-WAY CONNECTIONS (= # OF DB TABLES)	123

FIGURE 2I

Example of Navigation Using Filtering Criteria
Example of Orbital Navigation

Used in List Tool



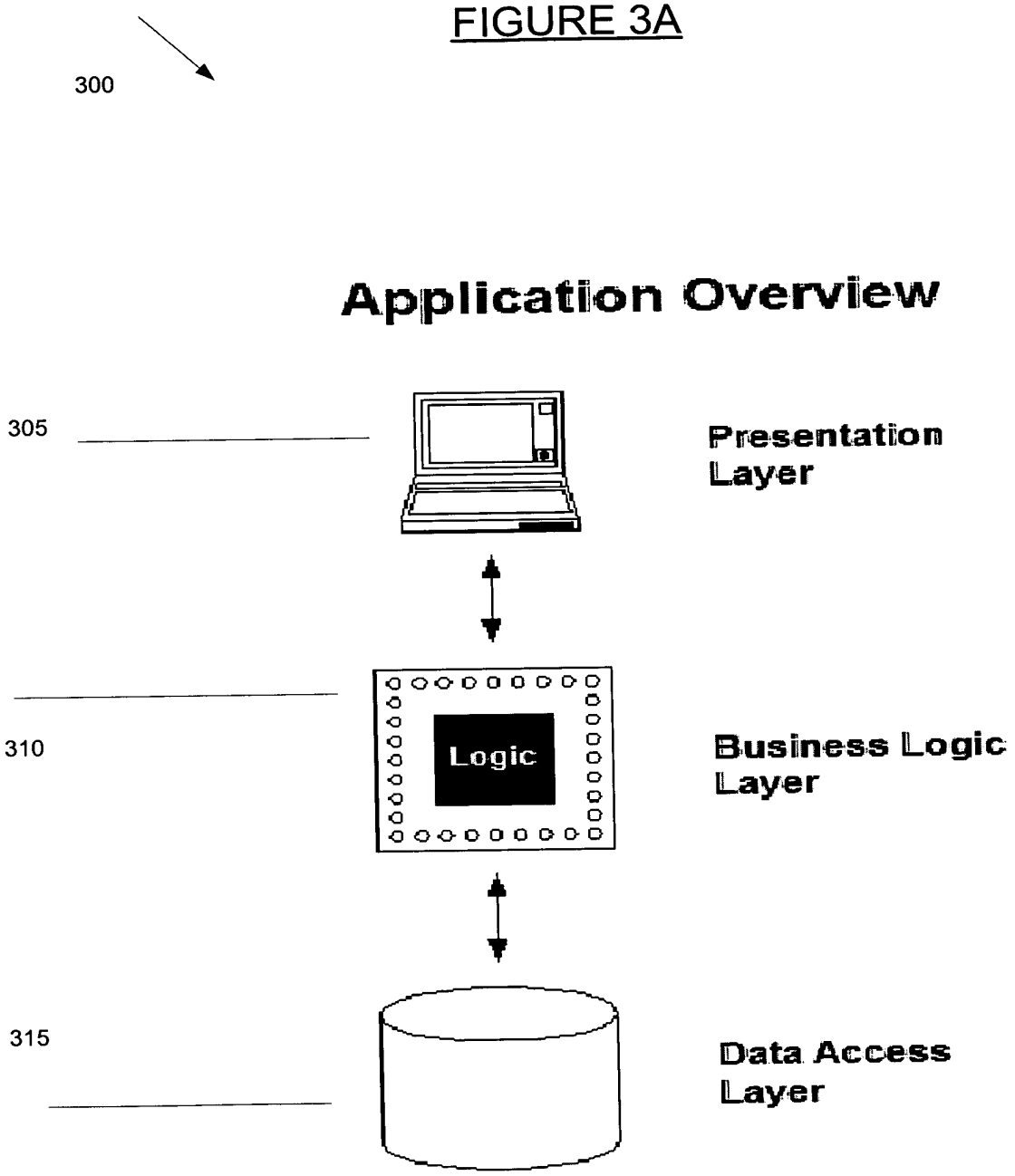
"Orbital Navigation" is based on the following principles:

1) User can navigate freely from one module to another, there is no pre-set route

2) User can return to modules he already saw

3) If he marked (choosed) some item in one module, items are still marked in the next navigation

FIGURE 3A


300
Application Overview
305
Presentation Layer
Logic
310
Business Logic Layer
315
Data Access Layer

300

FIGURE 3B

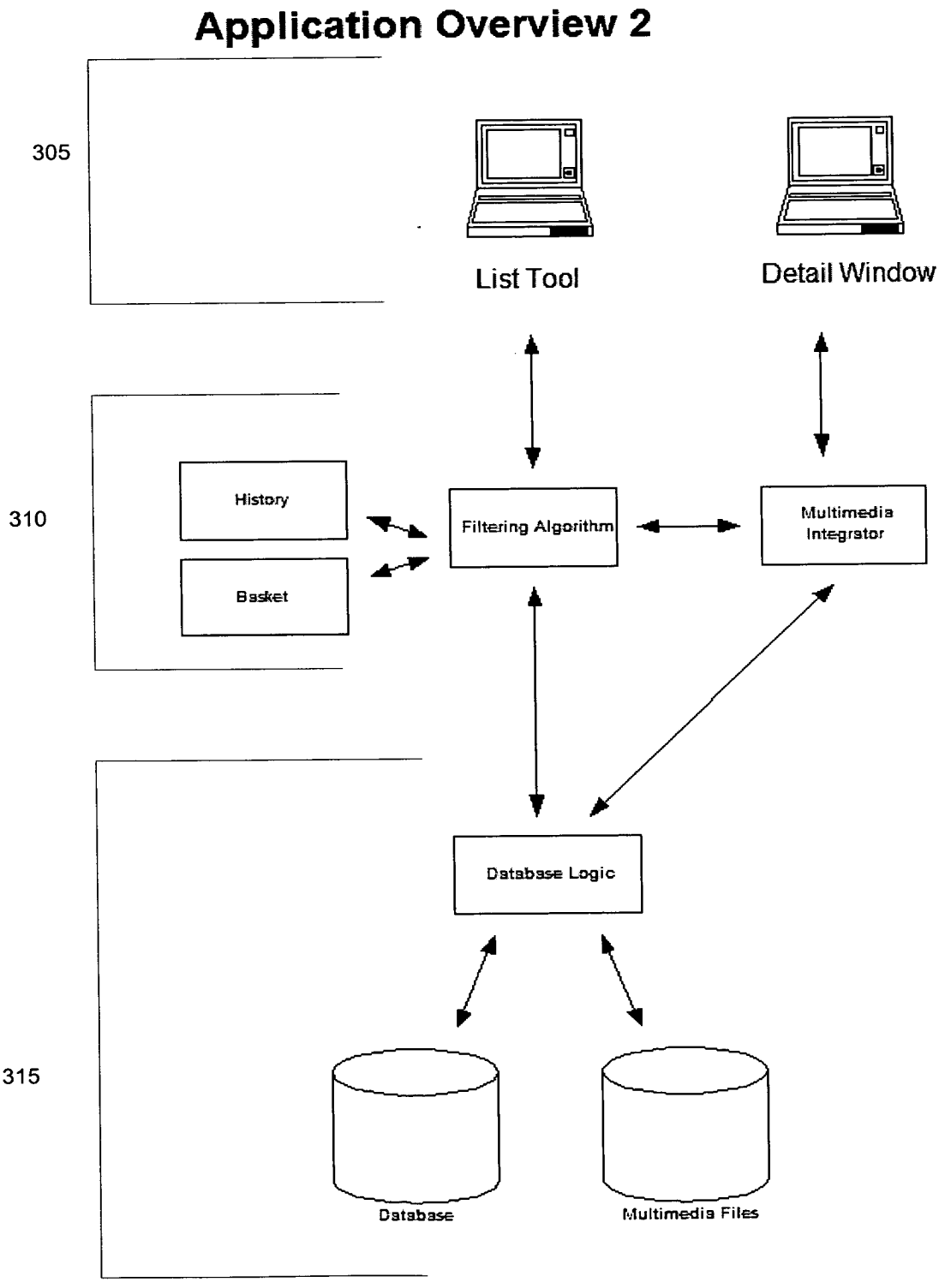


FIGURE 4

Example of Filtering Algorithm

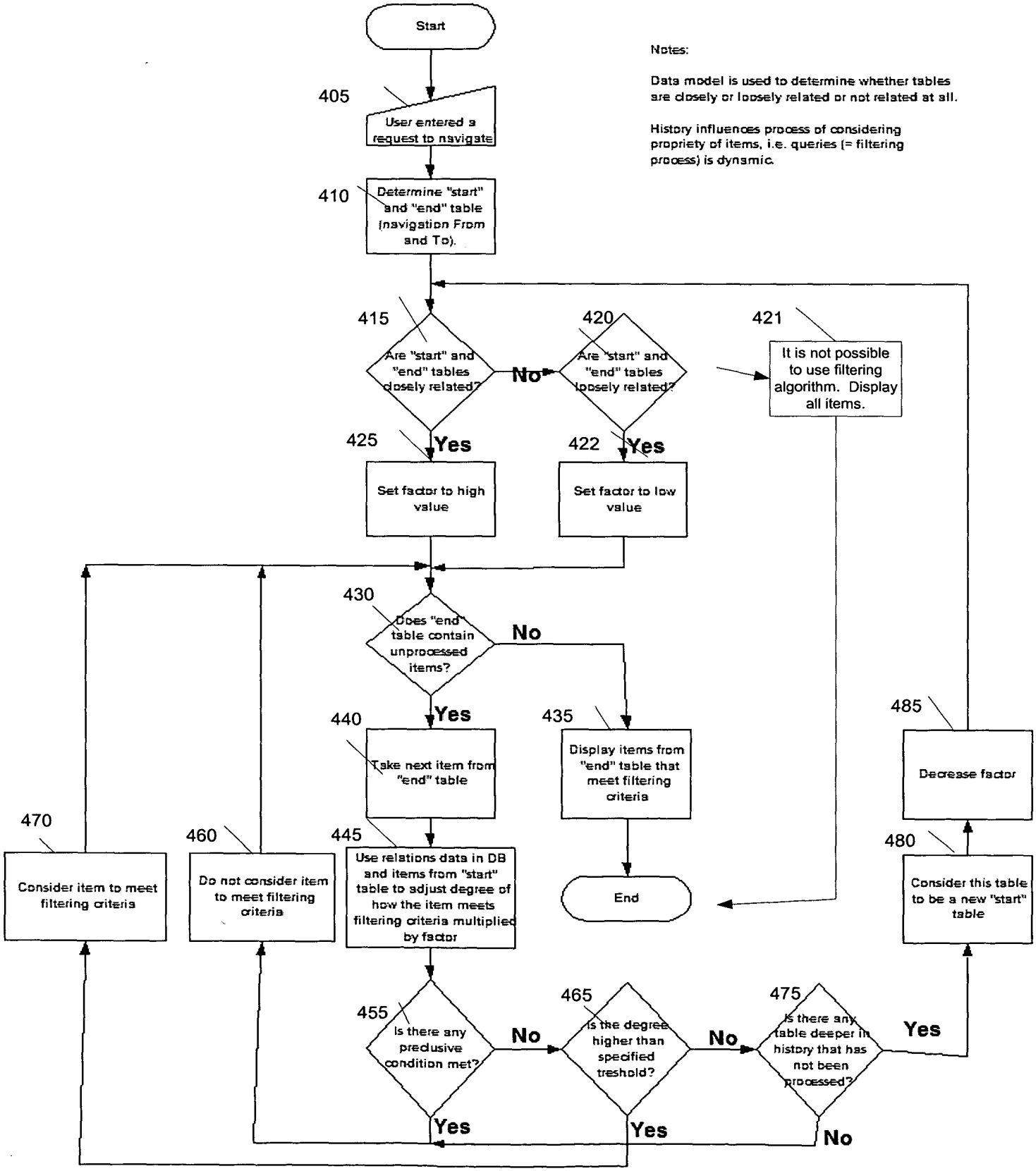


FIGURE 5

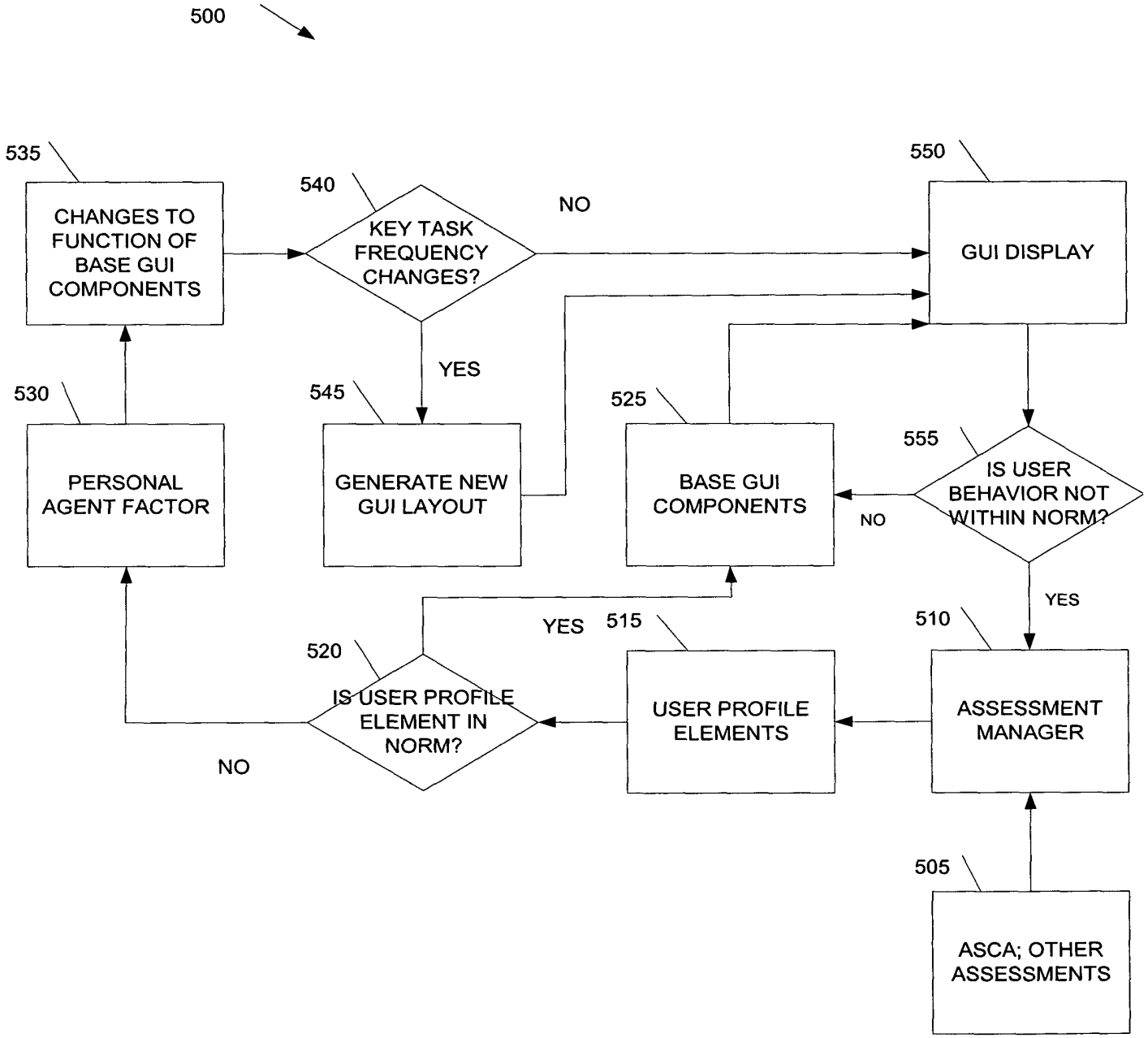

500
535
CHANGES TO FUNCTION OF BASE GUI COMPONENTS
540
KEY TASK FREQUENCY CHANGES?
NO
YES
550
GUI DISPLAY
530
PERSONAL AGENT FACTOR
545
GENERATE NEW GUI LAYOUT
525
BASE GUI COMPONENTS
555
IS USER BEHAVIOR NOT WITHIN NORM?
NO
YES
510
ASSESSMENT MANAGER
YES
515
USER PROFILE ELEMENTS
520
IS USER PROFILE ELEMENT IN NORM?
NO
505
ASCA; OTHER ASSESSMENTS

FIGURE 6

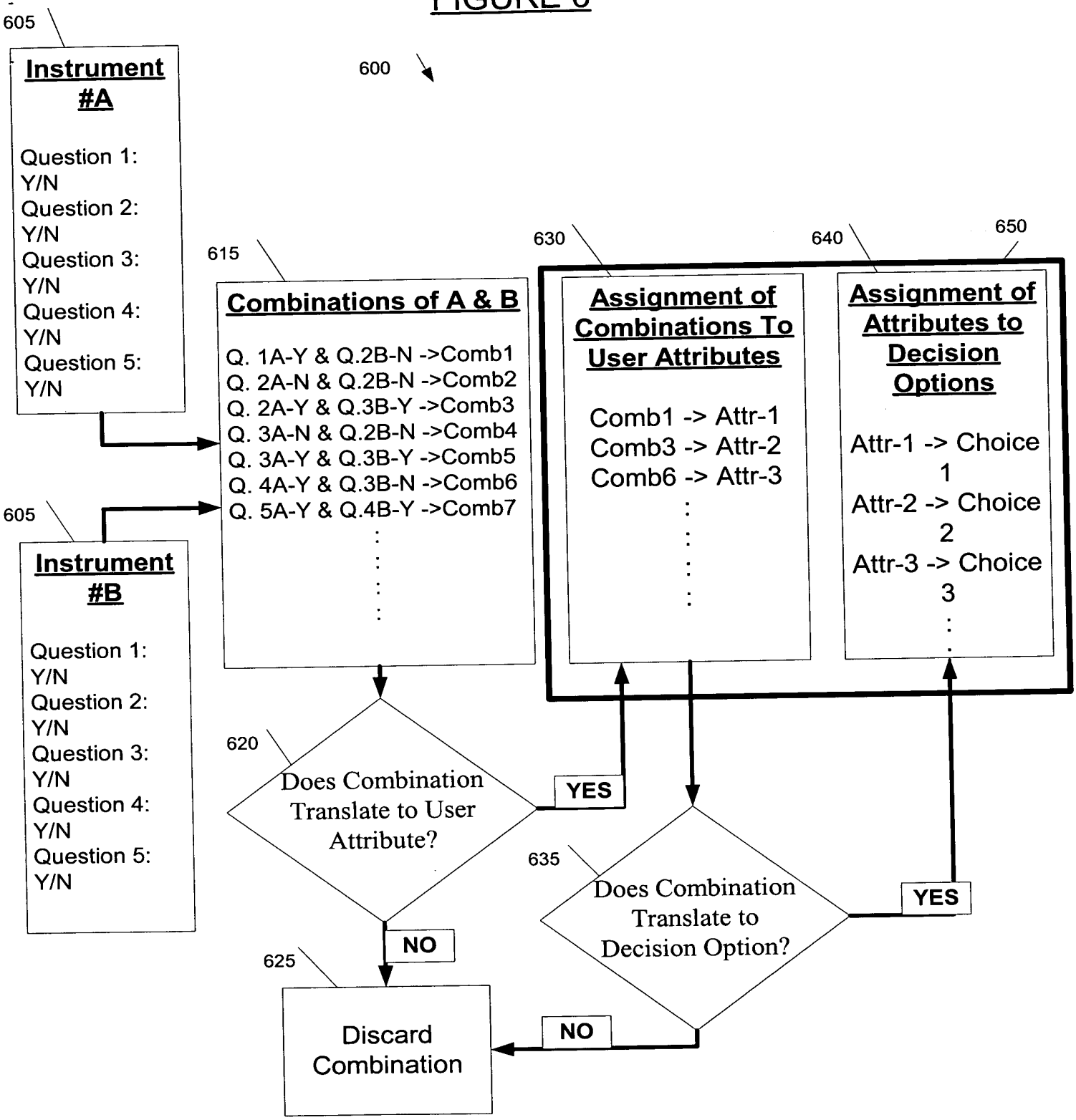

605
Instrument #A
Question 1: Y/N
Question 2: Y/N
Question 3: Y/N
Question 4: Y/N
Question 5: Y/N
600
615
Combinations of A & B
Q. 1A-Y & Q.2B-N ->Comb1
Q. 2A-N & Q.2B-N ->Comb2
Q. 2A-Y & Q.3B-Y ->Comb3
Q. 3A-N & Q.2B-N ->Comb4
Q. 3A-Y & Q.3B-Y ->Comb5
Q. 4A-Y & Q.3B-N ->Comb6
Q. 5A-Y & Q.4B-Y ->Comb7
630
Assignment of Combinations To User Attributes
Comb1 -> Attr-1
Comb3 -> Attr-2
Comb6 -> Attr-3
640
650
Assignment of Attributes to Decision Options
Attr-1 -> Choice 1
Attr-2 -> Choice 2
Attr-3 -> Choice 3
605
Instrument #B
Question 1: Y/N
Question 2: Y/N
Question 3: Y/N
Question 4: Y/N
Question 5: Y/N
620
Does Combination Translate to User Attribute?
YES
635
Does Combination Translate to Decision Option?
YES
NO
625
Discard Combination
NO

FIGURE 7

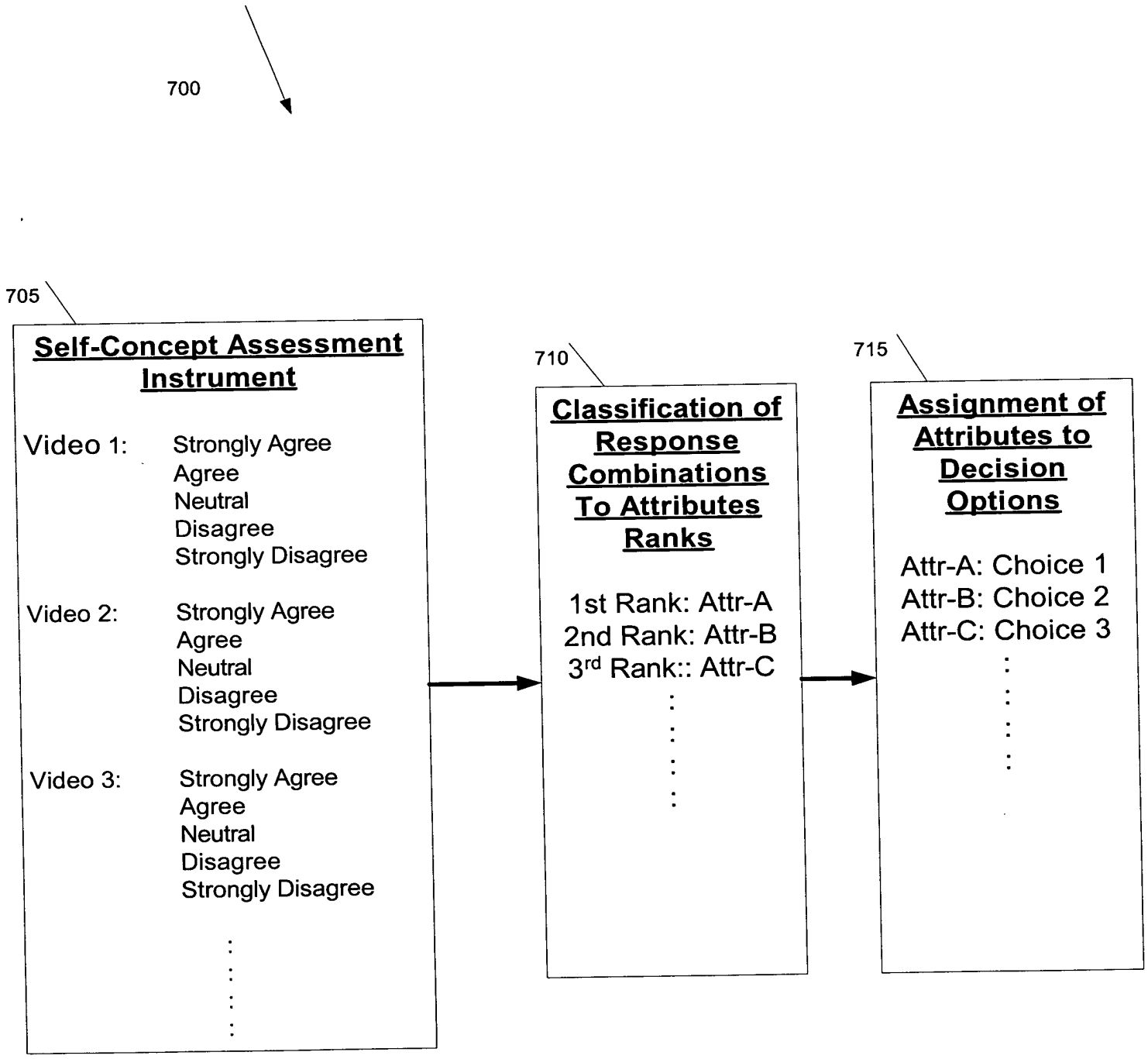

700
705
Self-Concept Assessment Instrument
Video 1:
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
Video 2:
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
Video 3:
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
710
Classification of Response Combinations To Attributes Ranks
1st Rank: Attr-A
2nd Rank: Attr-B
3rd Rank:: Attr-C
715
Assignment of Attributes to Decision Options
Attr-A: Choice 1
Attr-B: Choice 2
Attr-C: Choice 3

FIGURE 8

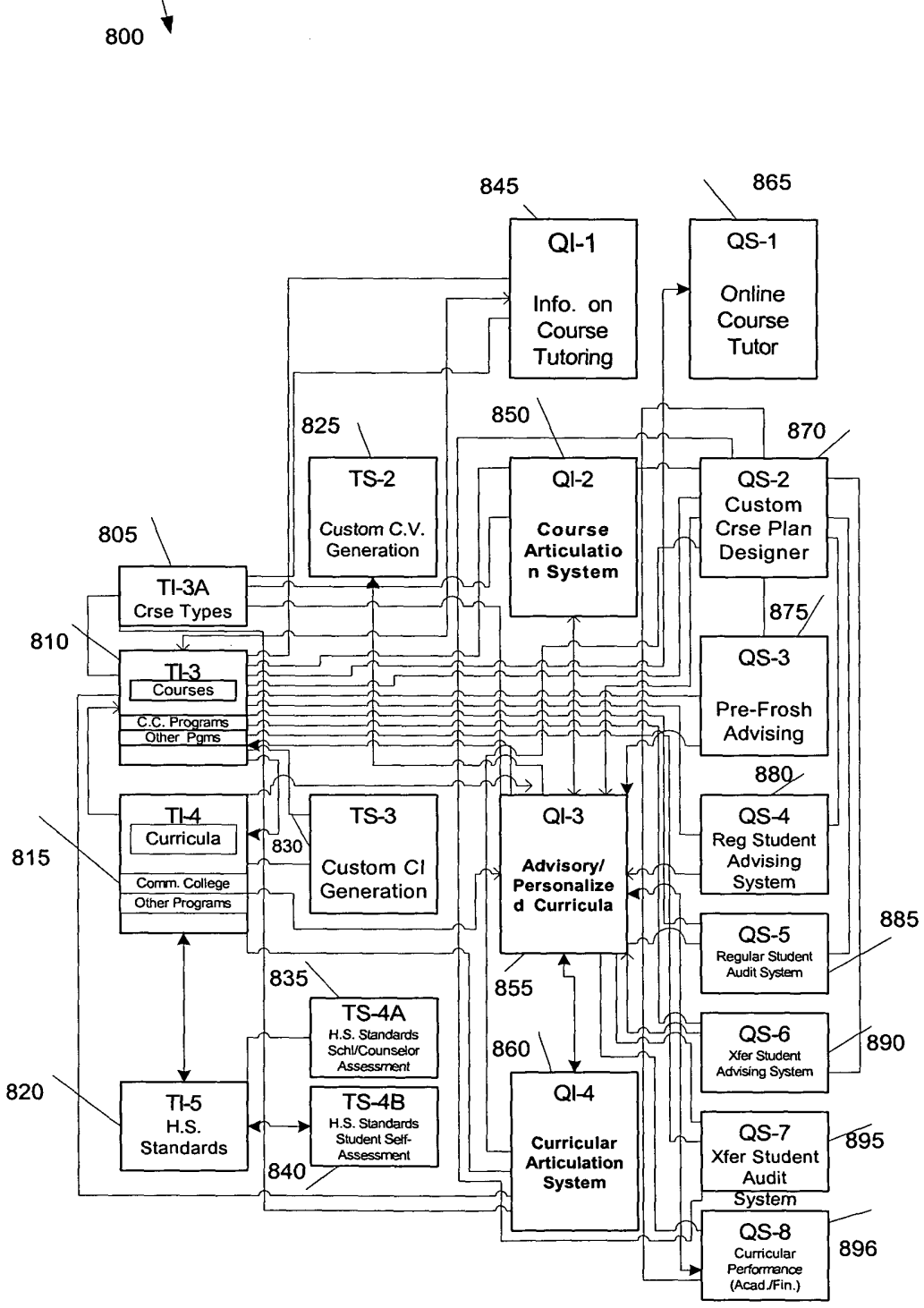

800
845
QI-1
Info. on Course Tutoring
865
QS-1
Online Course Tutor
825
TS-2
Custom C.V. Generation
850
QI-2
Course Articulation System
870
QS-2
Custom Crse Plan Designer
805
TI-3A
Crse Types
810
TI-3
Courses
C.C. Programs
Other Pgms
875
QS-3
Pre-Frosh Advising
880
TI-4
Curricula
Comm. College
Other Programs
815
830
TS-3
Custom CI Generation
QI-3
Advisory/ Personalized Curricula
QS-4
Reg Student Advising System
885
QS-5
Regular Student Audit System
835
855
TS-4A
H.S. Standards Schl/Counselor Assessment
860
890
QS-6
Xfer Student Advising System
820
TI-5
H.S. Standards
TS-4B
H.S. Standards Student Self-Assessment
QI-4
Curricular Articulation System
895
QS-7
Xfer Student Audit System
840
QS-8
Curricular Performance (Acad./Fin.)
896

FIGURE 9

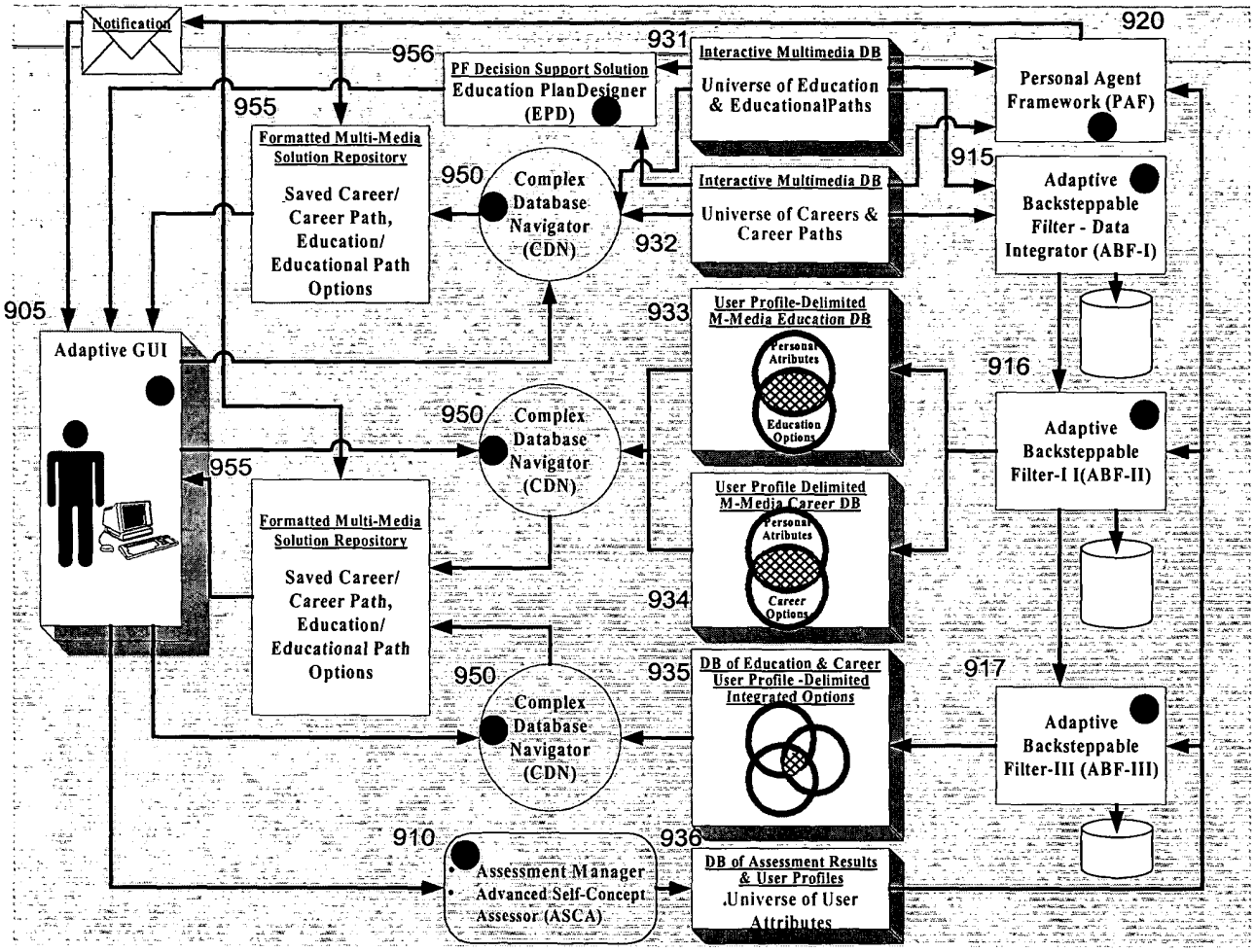

Notification
920
956
931
Interactive Multimedia DB
Universe of Education & EducationalPaths
PF Decision Support Solution
Education PlanDesigner (EPD)
Personal Agent Framework (PAF)
955
Formatted Multi-Media Solution Repository
Saved Career/ Career Path, Education/ Educational Path Options
950
Complex Database Navigator (CDN)
915
Interactive Multimedia DB
Universe of Careers & Career Paths
932
Adaptive Backsteppable Filter - Data Integrator (ABF-I)
905
933
User Profile-Delimited M-Media Education DB
Personal Atributes
Education Options
916
Adaptive GUI
950
Complex Database Navigator (CDN)
Adaptive Backsteppable Filter-I I(ABF-II)
955
Formatted Multi-Media Solution Repository
Saved Career/ Career Path, Education/ Educational Path Options
User Profile Delimited M-Media Career DB
Personal Atributes
Career Options
934
950
Complex Database Navigator (CDN)
935
DB of Education & Career User Profile -Delimited Integrated Options
917
Adaptive Backsteppable Filter-III (ABF-III)
910
936
Assessment Manager
Advanced Self-Concept Assessor (ASCA)
DB of Assessment Results & User Profiles
Universe of User Attributes

FIGURE 10

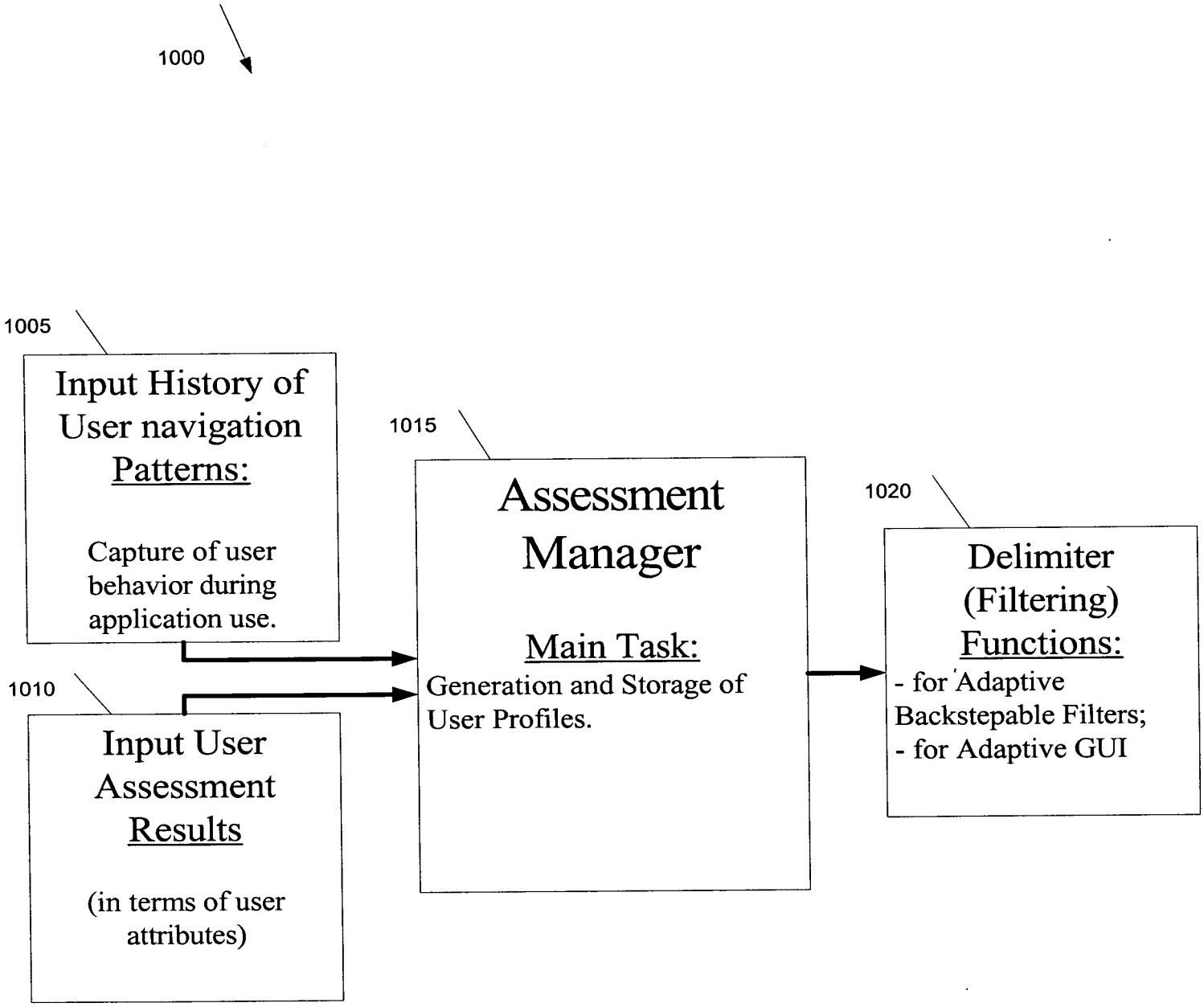

1000
1005
Input History of User navigation Patterns:
Capture of user behavior during application use.
1010
Input User Assessment Results
(in terms of user attributes)
1015
Assessment Manager
Main Task:
Generation and Storage of User Profiles.
1020
Delimiter (Filtering) Functions:
- for Adaptive Backstepable Filters;
- for Adaptive GUI

FIGURE 11A

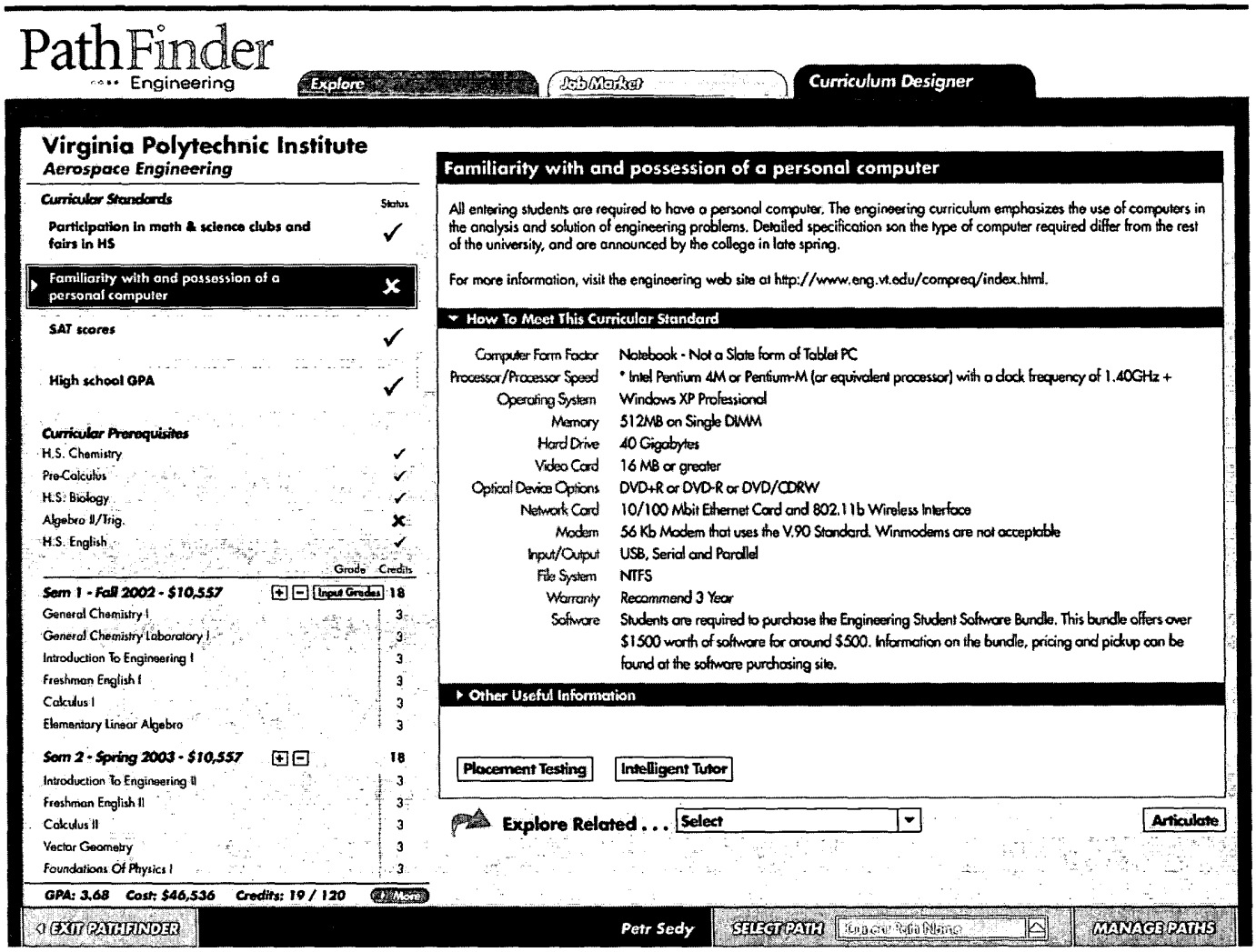

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Curricular Standards
Status
Participation in math & science clubs and fairs in HS
Familiarity with and possession of a personal computer
SAT scores
High school GPA
Curricular Prerequisites
H.S. Chemistry
Pre-Calculus
H.S. Biology
Algebra II/Trig.
H.S. English
Grade
Credits
Sem 1 - Fall 2002 - $10,557
Input Grades
18
General Chemistry I
General Chemistry Laboratory I
Introduction To Engineering I
Freshman English I
Calculus I
Elementary Linear Algebra
Sem 2 - Spring 2003 - $10,557
18
Introduction To Engineering II
Freshman English II
Calculus II
Vector Geometry
Foundations Of Physics I
GPA: 3.68
Cost: $46,536
Credits: 19 / 120
Familiarity with and possession of a personal computer
All entering students are required to have a personal computer. The engineering curriculum emphasizes the use of computers in the analysis and solution of engineering problems. Detailed specification son the type of computer required differ from the rest of the university, and are announced by the college in late spring.
For more information, visit the engineering web site at http://www.eng.vt.edu/compreq/index.html.
How To Meet This Curricular Standard
Computer Form Factor
Notebook - Not a Slate form of Tablet PC
Processor/Processor Speed
* Intel Pentium 4M or Pentium-M (or equivalent processor) with a clock frequency of 1.40GHz +
Operating System
Windows XP Professional
Memory
512MB on Single DIMM
Hard Drive
40 Gigabytes
Video Card
16 MB or greater
Optical Device Options
DVD+R or DVD-R or DVD/CDRW
Network Card
10/100 Mbit Ethernet Card and 802.11b Wireless Interface
Modem
56 Kb Modem that uses the V.90 Standard. Winmodems are not acceptable
Input/Output
USB, Serial and Parallel
File System
NTFS
Warranty
Recommend 3 Year
Software
Students are required to purchase the Engineering Student Software Bundle. This bundle offers over $1500 worth of software for around $500. Information on the bundle, pricing and pickup can be found at the software purchasing site.
Other Useful Information
Placement Testing
Intelligent Tutor
Explore Related . . .
Select
Articulate
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11B

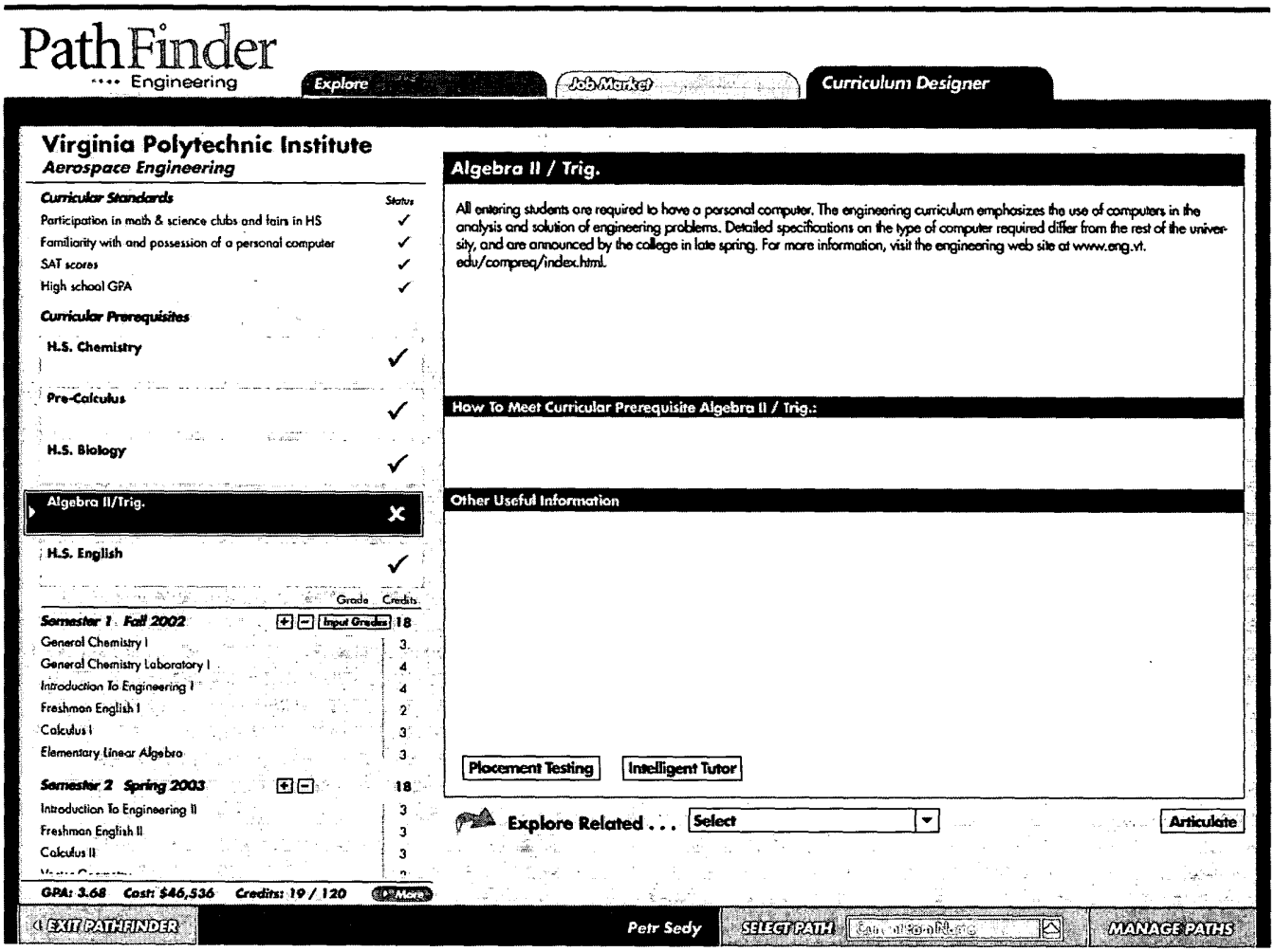

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Curricular Standards
Status
Participation in math & science clubs and fairs in HS
Familiarity with and possession of a personal computer
SAT scores
High school GPA
Curricular Prerequisites
H.S. Chemistry
Pre-Calculus
H.S. Biology
Algebra II/Trig.
H.S. English
Grade
Credits
Semester 1 Fall 2002
Input Grades
18
General Chemistry I
General Chemistry Laboratory I
Introduction To Engineering I
Freshman English I
Calculus I
Elementary Linear Algebra
Semester 2 Spring 2003
18
Introduction To Engineering II
Freshman English II
Calculus II
GPA: 3.68
Cost: $46,536
Credits: 19 / 120
Algebra II / Trig.
All entering students are required to have a personal computer. The engineering curriculum emphasizes the use of computers in the analysis and solution of engineering problems. Detailed specifications on the type of computer required differ from the rest of the university, and are announced by the college in late spring. For more information, visit the engineering web site at www.eng.vt.edu/compreq/index.html.
How To Meet Curricular Prerequisite Algebra II / Trig.:
Other Useful Information
Placement Testing
Intelligent Tutor
Explore Related . . .
Select
Articulate
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11C

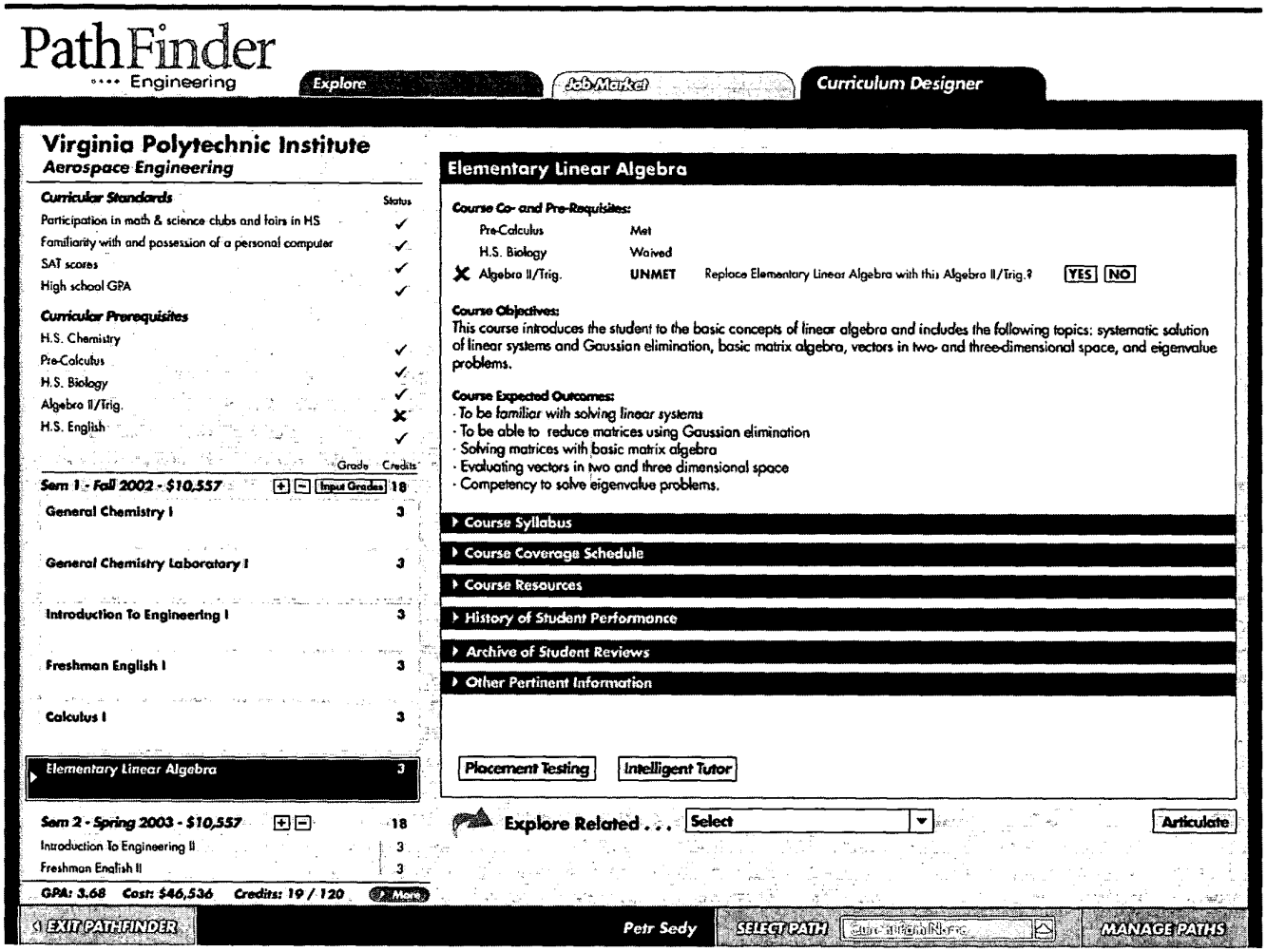

PathFinder
Engineering
Explore
JobMarket
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Curricular Standards
Status
Participation in math & science clubs and fairs in HS
Familiarity with and possession of a personal computer
SAT scores
High school GPA
Curricular Prerequisites
H.S. Chemistry
Pre-Calculus
H.S. Biology
Algebra II/Trig.
H.S. English
Grade
Credits
Sem 1 - Fall 2002 - $10,557
Input Grades
18
General Chemistry I 3
General Chemistry Laboratory I 3
Introduction To Engineering I 3
Freshman English I 3
Calculus I 3
Elementary Linear Algebra 3
Sem 2 - Spring 2003 - $10,557
18
Introduction To Engineering II 3
Freshman English II 3
GPA: 3.68 Cost: $46,536 Credits: 19 / 120
Elementary Linear Algebra
Course Co- and Pre-Requisites:
Pre-Calculus Met
H.S. Biology Waived
Algebra II/Trig. UNMET Replace Elementary Linear Algebra with this Algebra II/Trig.? YES NO
Course Objectives:
This course introduces the student to the basic concepts of linear algebra and includes the following topics: systematic solution of linear systems and Gaussian elimination, basic matrix algebra, vectors in two- and three-dimensional space, and eigenvalue problems.
Course Expected Outcomes:
· To be familiar with solving linear systems
· To be able to reduce matrices using Gaussian elimination
· Solving matrices with basic matrix algebra
· Evaluating vectors in two and three dimensional space
· Competency to solve eigenvalue problems.
Course Syllabus
Course Coverage Schedule
Course Resources
History of Student Performance
Archive of Student Reviews
Other Pertinent Information
Placement Testing
Intelligent Tutor
Explore Related . . .
Select
Articulate
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11D

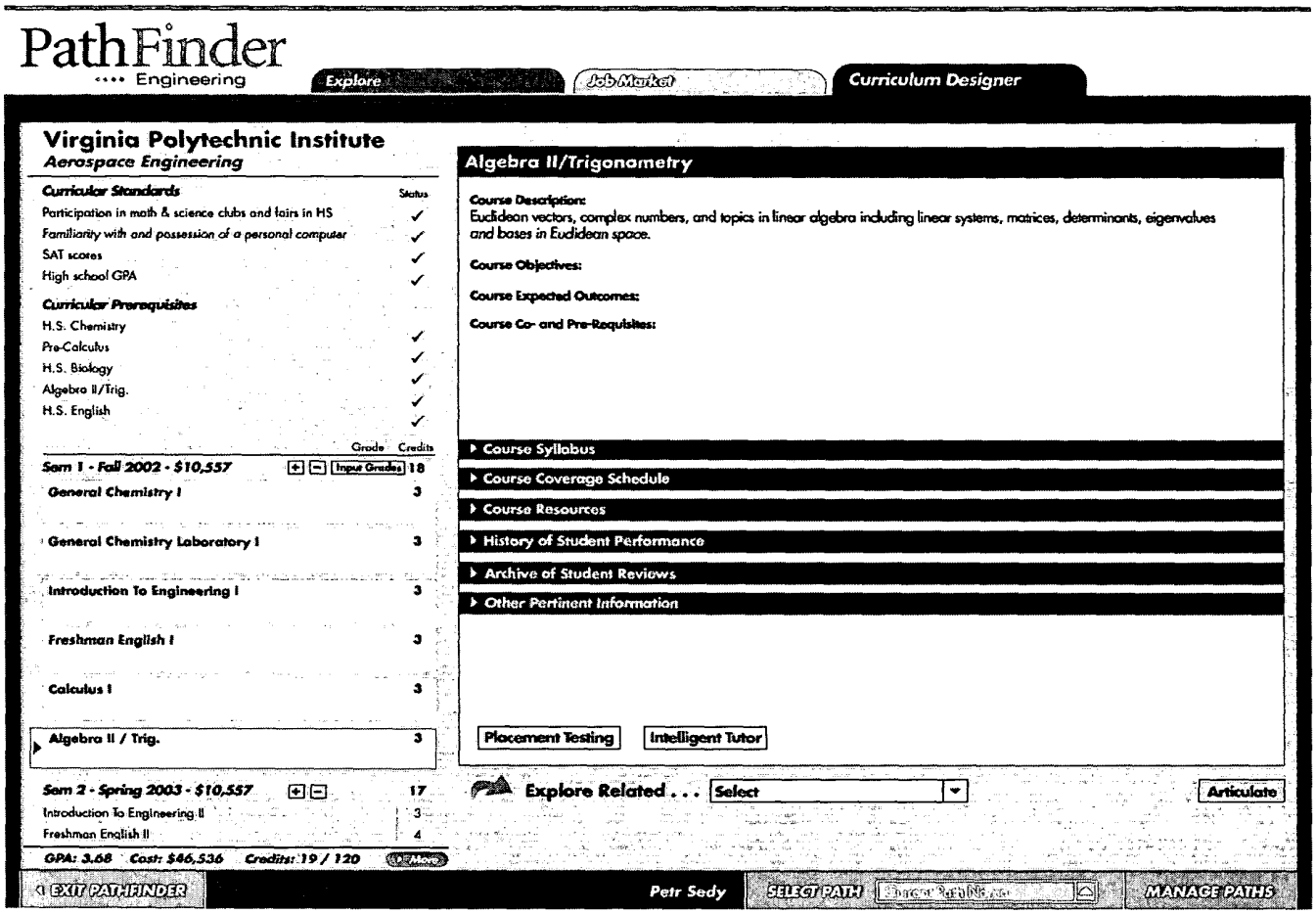

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Curricular Standards
Status
Participation in math & science clubs and fairs in HS
Familiarity with and possession of a personal computer
SAT scores
High school GPA
Curricular Prerequisites
H.S. Chemistry
Pre-Calculus
H.S. Biology
Algebra II/Trig.
H.S. English
Grade
Credits
Sem 1 - Fall 2002 - $10,557
Input Grades
18
General Chemistry I
3
General Chemistry Laboratory I
3
Introduction To Engineering I
3
Freshman English I
3
Calculus I
3
Algebra II / Trig.
3
Sem 2 - Spring 2003 - $10,557
17
Introduction To Engineering II
3
Freshman English II
4
GPA: 3.68
Cost: $66,536
Credits: 19 / 120
More
Algebra II/Trigonometry
Course Description:
Euclidean vectors, complex numbers, and topics in linear algebra including linear systems, matrices, determinants, eigenvalues and bases in Euclidean space.
Course Objectives:
Course Expected Outcomes:
Course Co- and Pre-Requisites:
Course Syllabus
Course Coverage Schedule
Course Resources
History of Student Performance
Archive of Student Reviews
Other Pertinent Information
Placement Testing
Intelligent Tutor
Explore Related . . .
Select
Articulate
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11E

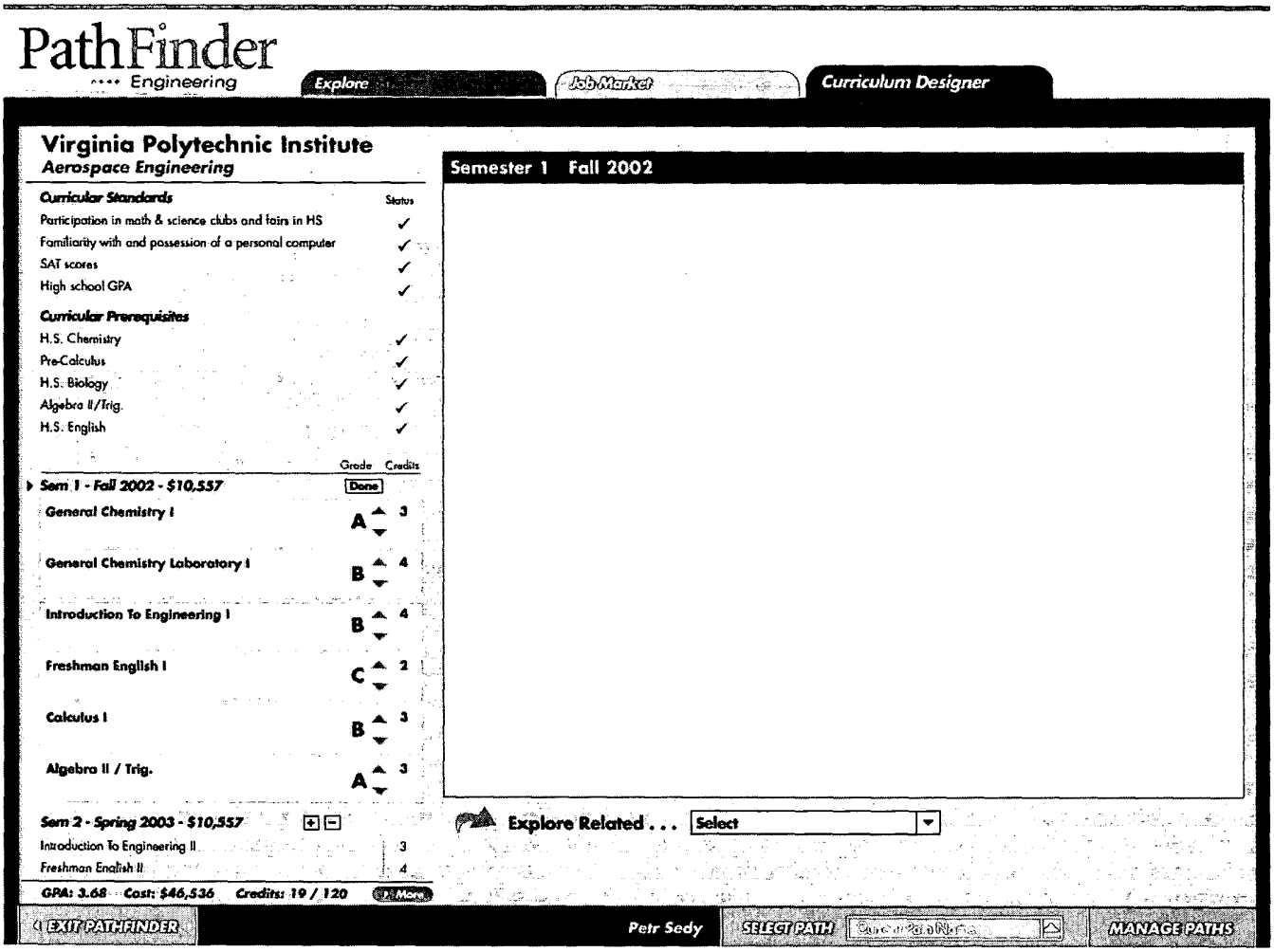

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Curricular Standards
Status
Participation in math & science clubs and fairs in HS
Familiarity with and possession of a personal computer
SAT scores
High school GPA
Curricular Prerequisites
H.S. Chemistry
Pre-Calculus
H.S. Biology
Algebra II/Trig.
H.S. English
Grade
Credits
Sem 1 - Fall 2002 - $10,557
Done
General Chemistry I
A
3
General Chemistry Laboratory I
B
4
Introduction To Engineering I
B
4
Freshman English I
C
2
Calculus I
B
3
Algebra II / Trig.
A
3
Sem 2 - Spring 2003 - $10,557
Introduction To Engineering II
3
Freshman English II
4
GPA: 3.68
Cost: $46,536
Credits: 19 / 120
Semester 1 Fall 2002
Explore Related . . .
Select
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11F

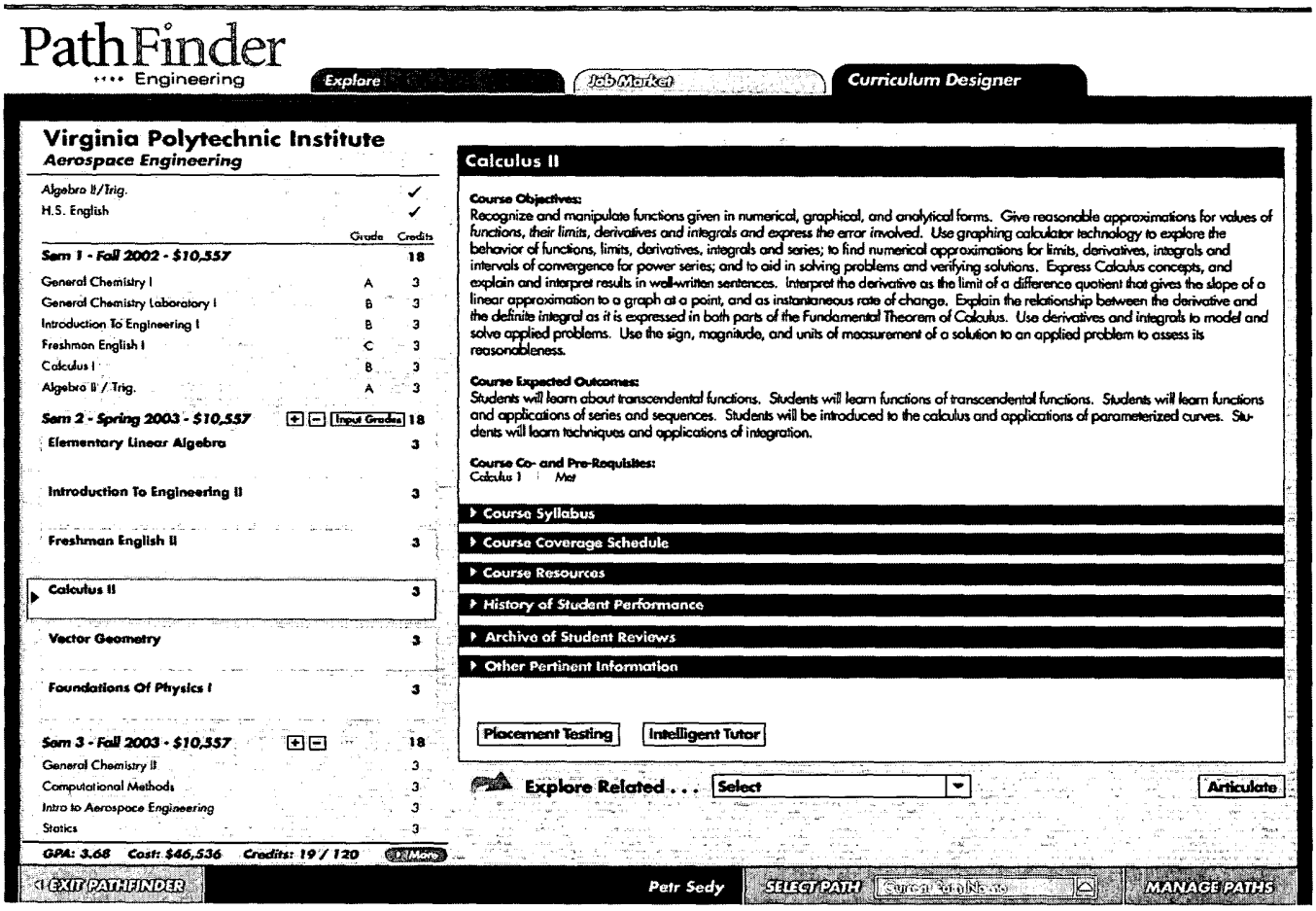

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Algebra II/Trig. ✓
H.S. English ✓
Grade Credits
Sem 1 - Fall 2002 - $10,557 18
General Chemistry I A 3
General Chemistry Laboratory I B 3
Introduction To Engineering I B 3
Freshman English I C 3
Calculus I B 3
Algebra II / Trig. A 3
Sem 2 - Spring 2003 - $10,557 Input Grades 18
Elementary Linear Algebra 3
Introduction To Engineering II 3
Freshman English II 3
Calculus II 3
Vector Geometry 3
Foundations Of Physics I 3
Sem 3 - Fall 2003 - $10,557 18
General Chemistry II 3
Computational Methods 3
Intro to Aerospace Engineering 3
Statics 3
GPA: 3.68 Cost: $46,536 Credits: 19 / 120
Calculus II
Course Objectives:
Recognize and manipulate functions given in numerical, graphical, and analytical forms. Give reasonable approximations for values of functions, their limits, derivatives and integrals and express the error involved. Use graphing calculator technology to explore the behavior of functions, limits, derivatives, integrals and series; to find numerical approximations for limits, derivatives, integrals and intervals of convergence for power series; and to aid in solving problems and verifying solutions. Express Calculus concepts, and explain and interpret results in well-written sentences. Interpret the derivative as the limit of a difference quotient that gives the slope of a linear approximation to a graph at a point, and as instantaneous rate of change. Explain the relationship between the derivative and the definite integral as it is expressed in both parts of the Fundamental Theorem of Calculus. Use derivatives and integrals to model and solve applied problems. Use the sign, magnitude, and units of measurement of a solution to an applied problem to assess its reasonableness.
Course Expected Outcomes:
Students will learn about transcendental functions. Students will learn functions of transcendental functions. Students will learn functions and applications of series and sequences. Students will be introduced to the calculus and applications of parameterized curves. Students will learn techniques and applications of integration.
Course Co- and Pre-Requisites:
Calculus I : Met
Course Syllabus
Course Coverage Schedule
Course Resources
History of Student Performance
Archive of Student Reviews
Other Pertinent Information
Placement Testing
Intelligent Tutor
Explore Related . . .
Select
Articulate
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11G

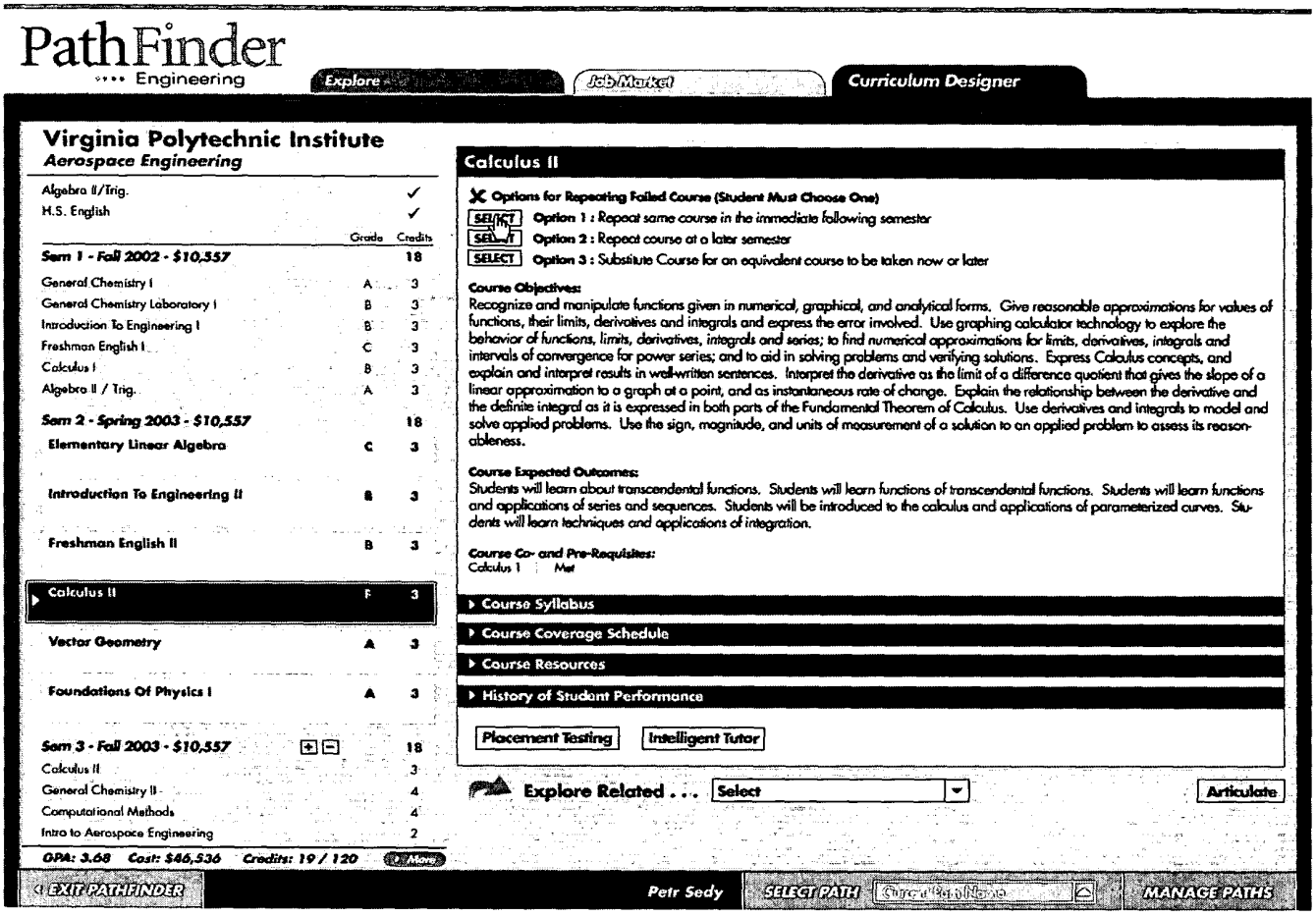

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Algebra II/Trig. ✓
H.S. English ✓
Grade Credits
Sem 1 - Fall 2002 - $10,557 18
General Chemistry I A 3
General Chemistry Laboratory I B 3
Introduction To Engineering I B 3
Freshman English I C 3
Calculus I B 3
Algebra II / Trig. A 3
Sem 2 - Spring 2003 - $10,557 18
Elementary Linear Algebra C 3
Introduction To Engineering II B 3
Freshman English II B 3
Calculus II F 3
Vector Geometry A 3
Foundations Of Physics I A 3
Sem 3 - Fall 2003 - $10,557 18
Calculus II 3
General Chemistry II 4
Computational Methods 4
Intro to Aerospace Engineering 2
GPA: 3.68 Cost: $46,536 Credits: 19 / 120
Calculus II
Options for Repeating Failed Course (Student Must Choose One)
SELECT Option 1 : Repeat same course in the immediate following semester
SELECT Option 2 : Repeat course at a later semester
SELECT Option 3 : Substitute Course for an equivalent course to be taken now or later
Course Objectives:
Recognize and manipulate functions given in numerical, graphical, and analytical forms. Give reasonable approximations for values of functions, their limits, derivatives and integrals and express the error involved. Use graphing calculator technology to explore the behavior of functions, limits, derivatives, integrals and series; to find numerical approximations for limits, derivatives, integrals and intervals of convergence for power series; and to aid in solving problems and verifying solutions. Express Calculus concepts, and explain and interpret results in well-written sentences. Interpret the derivative as the limit of a difference quotient that gives the slope of a linear approximation to a graph at a point, and as instantaneous rate of change. Explain the relationship between the derivative and the definite integral as it is expressed in both parts of the Fundamental Theorem of Calculus. Use derivatives and integrals to model and solve applied problems. Use the sign, magnitude, and units of measurement of a solution to an applied problem to assess its reasonableness.
Course Expected Outcomes:
Students will learn about transcendental functions. Students will learn functions of transcendental functions. Students will learn functions and applications of series and sequences. Students will be introduced to the calculus and applications of parameterized curves. Students will learn techniques and applications of integration.
Course Co- and Pre-Requisites:
Calculus I : Met
Course Syllabus
Course Coverage Schedule
Course Resources
History of Student Performance
Placement Testing
Intelligent Tutor
Explore Related . . .
Select
Articulate
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11H

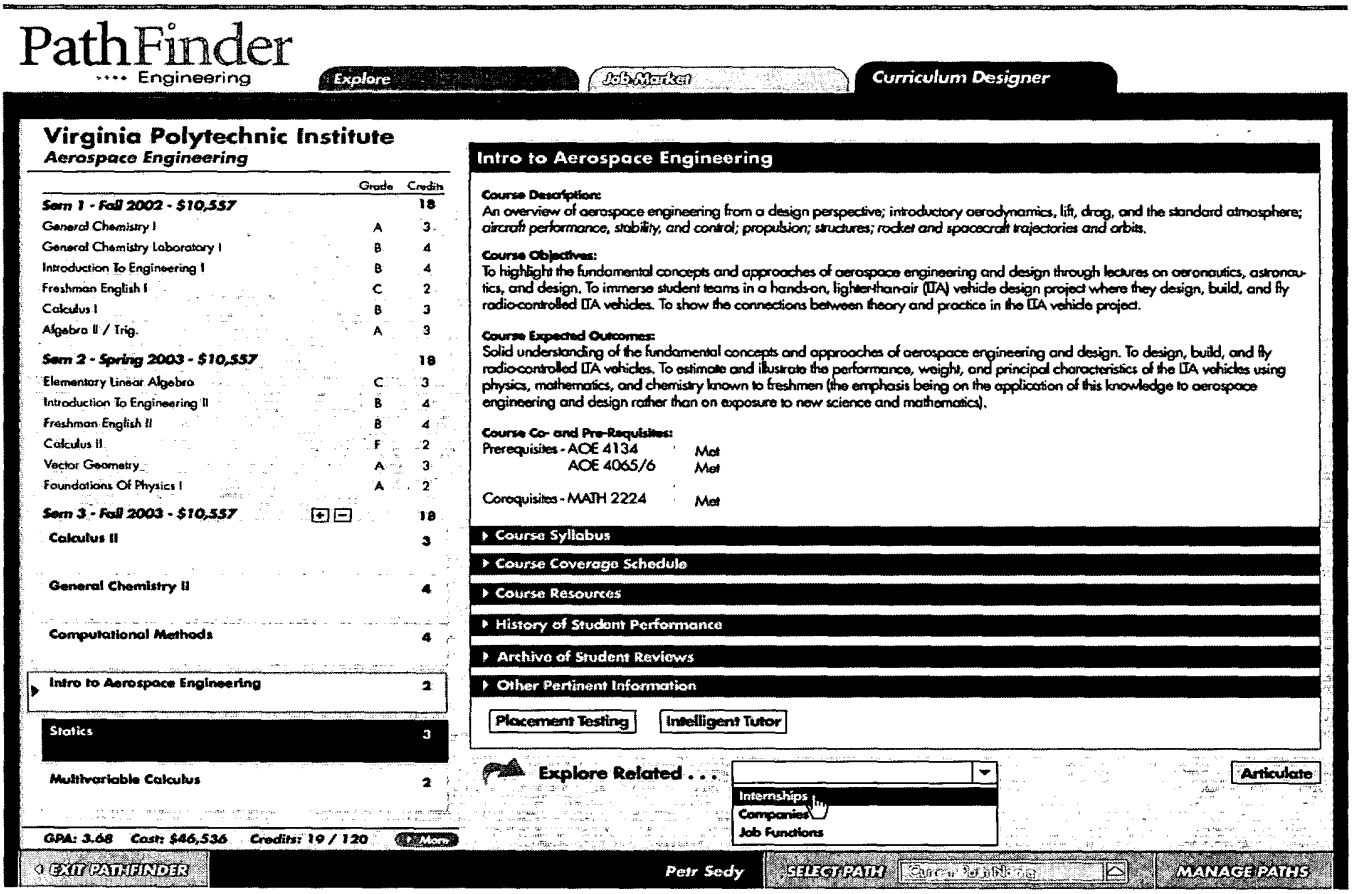

PathFinder
Engineering
Explore
JobMarket
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Grade
Credits
Sem 1 - Fall 2002 - $10,557
18
General Chemistry I
A
3
General Chemistry Laboratory I
B
4
Introduction To Engineering I
B
4
Freshman English I
C
2
Calculus I
B
3
Algebra II / Trig.
A
3
Sem 2 - Spring 2003 - $10,557
18
Elementary Linear Algebra
C
3
Introduction To Engineering II
B
4
Freshman English II
B
4
Calculus II
F
2
Vector Geometry
A
3
Foundations Of Physics I
A
2
Sem 3 - Fall 2003 - $10,557
18
Calculus II
3
General Chemistry II
4
Computational Methods
4
Intro to Aerospace Engineering
2
Statics
3
Multivariable Calculus
2
GPA: 3.68
Cost: $46,536
Credits: 19 / 120
More
Intro to Aerospace Engineering
Course Description:
An overview of aerospace engineering from a design perspective; introductory aerodynamics, lift, drag, and the standard atmosphere; aircraft performance, stability, and control; propulsion; structures; rocket and spacecraft trajectories and orbits.
Course Objectives:
To highlight the fundamental concepts and approaches of aerospace engineering and design through lectures on aeronautics, astronautics, and design. To immerse student teams in a hands-on, lighter-than-air (LTA) vehicle design project where they design, build, and fly radio-controlled LTA vehicles. To show the connections between theory and practice in the LTA vehicle project.
Course Expected Outcomes:
Solid understanding of the fundamental concepts and approaches of aerospace engineering and design. To design, build, and fly radio-controlled LTA vehicles. To estimate and illustrate the performance, weight, and principal characteristics of the LTA vehicles using physics, mathematics, and chemistry known to freshmen (the emphasis being on the application of this knowledge to aerospace engineering and design rather than on exposure to new science and mathematics).
Course Co- and Pre-Requisites:
Prerequisites - AOE 4134 Met
AOE 4065/6 Met
Corequisites - MATH 2224 Met
Course Syllabus
Course Coverage Schedule
Course Resources
History of Student Performance
Archive of Student Reviews
Other Pertinent Information
Placement Testing
Intelligent Tutor
Explore Related . . .
Internships
Companies
Job Functions
Articulate
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11I

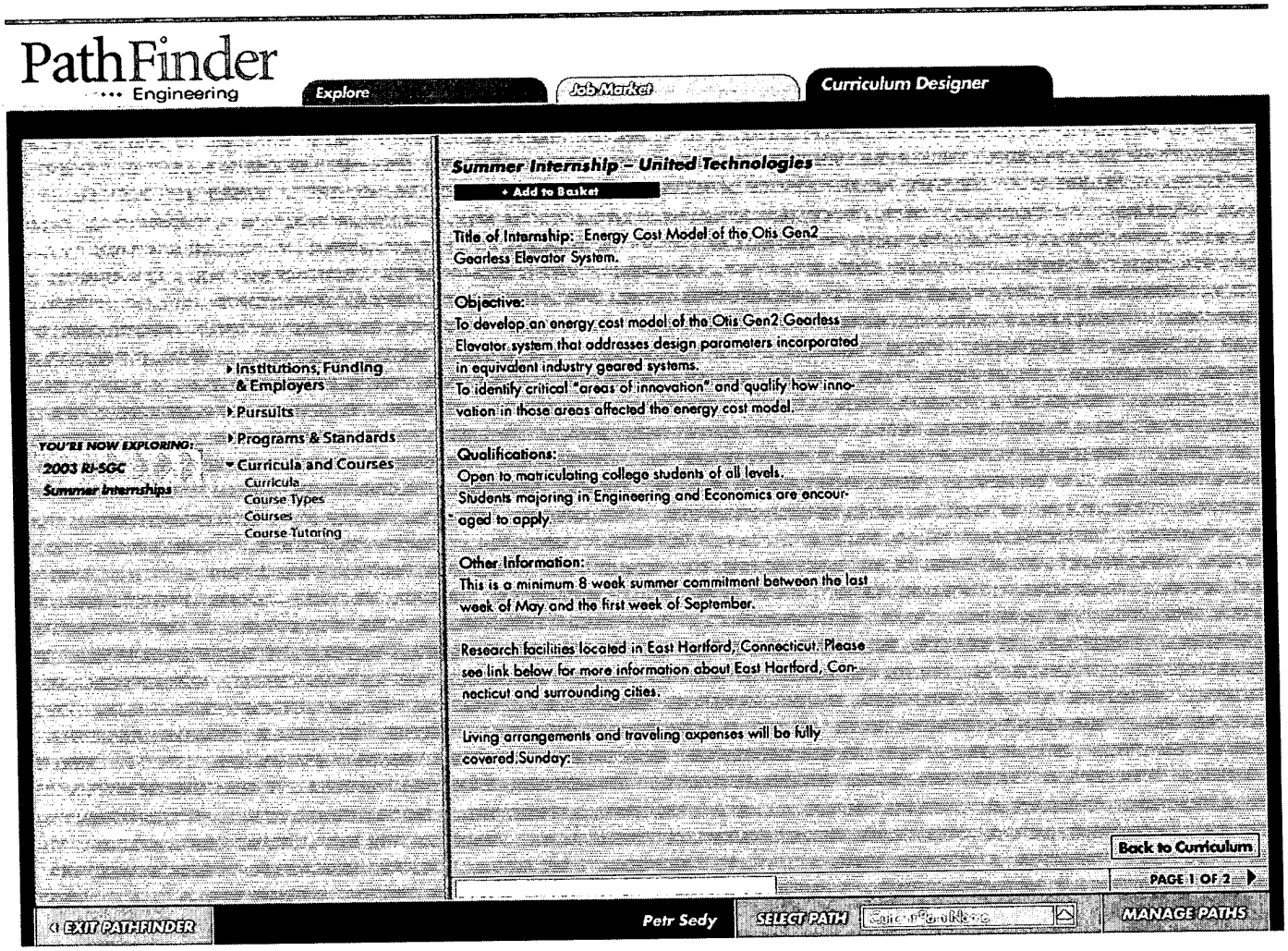

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
YOU'RE NOW EXPLORING:
2003 RI-SGC
Summer Internships
Institutions, Funding & Employers
Pursuits
Programs & Standards
Curricula and Courses
Curricula
Course Types
Courses
Course Tutoring
Summer Internship – United Technologies
+ Add to Basket
Title of Internship: Energy Cost Model of the Otis Gen2 Gearless Elevator System.
Objective:
To develop an energy cost model of the Otis Gen2 Gearless Elevator system that addresses design parameters incorporated in equivalent industry geared systems.
To identify critical "areas of innovation" and qualify how innovation in those areas affected the energy cost model.
Qualifications:
Open to matriculating college students of all levels.
Students majoring in Engineering and Economics are encouraged to apply.
Other Information:
This is a minimum 8 week summer commitment between the last week of May and the first week of September.
Research facilities located in East Hartford, Connecticut. Please see link below for more information about East Hartford, Connecticut and surrounding cities.
Living arrangements and traveling expenses will be fully covered Sunday:
Back to Curriculum
PAGE 1 OF 2
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11J

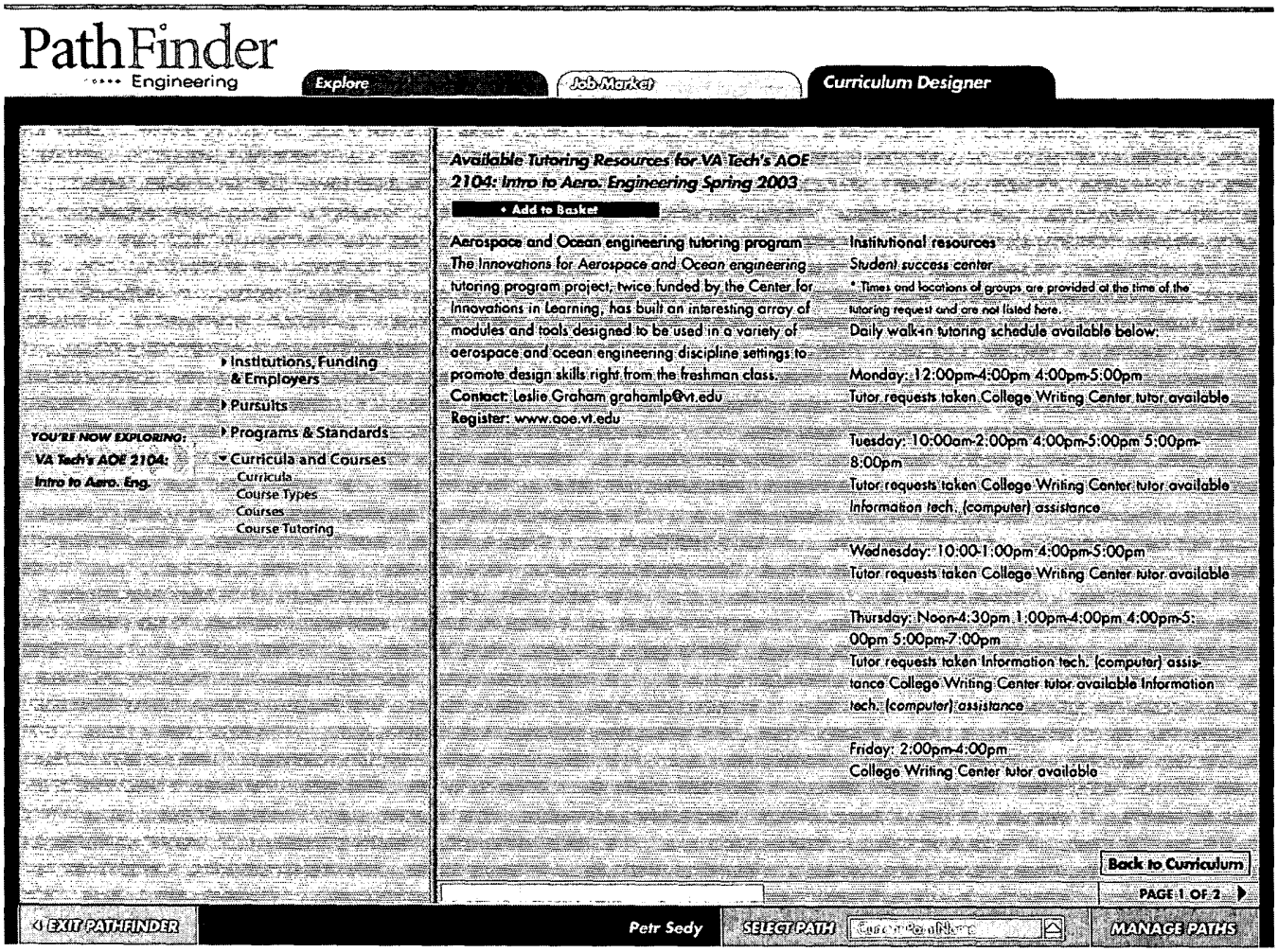

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
YOU'RE NOW EXPLORING:
VA Tech's AOE 2104: Intro to Aero. Eng.
Institutions, Funding & Employers
Pursuits
Programs & Standards
Curricula and Courses
Curricula
Course Types
Courses
Course Tutoring
Available Tutoring Resources for VA Tech's AOE 2104: Intro to Aero. Engineering Spring 2003
+ Add to Basket
Aerospace and Ocean engineering tutoring program
The Innovations for Aerospace and Ocean engineering tutoring program project, twice funded by the Center for Innovations in Learning, has built an interesting array of modules and tools designed to be used in a variety of aerospace and ocean engineering discipline settings to promote design skills right from the freshman class.
Contact: Leslie Graham grahamlp@vt.edu
Register: www.aoe.vt.edu
Institutional resources
Student success center
* Times and locations of groups are provided at the time of the tutoring request and are not listed here.
Daily walk-in tutoring schedule available below:
Monday: 12:00pm-4:00pm 4:00pm-5:00pm
Tutor requests taken College Writing Center tutor available
Tuesday: 10:00am-2:00pm 4:00pm-5:00pm 5:00pm-8:00pm
Tutor requests taken College Writing Center tutor available Information tech. (computer) assistance
Wednesday: 10:00-1:00pm 4:00pm-5:00pm
Tutor requests taken College Writing Center tutor available
Thursday: Noon-4:30pm 1:00pm-4:00pm 4:00pm-5:00pm 5:00pm-7:00pm
Tutor requests taken Information tech. (computer) assistance College Writing Center tutor available Information tech. (computer) assistance
Friday: 2:00pm-4:00pm
College Writing Center tutor available
Back to Curriculum
PAGE 1 OF 2
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11K

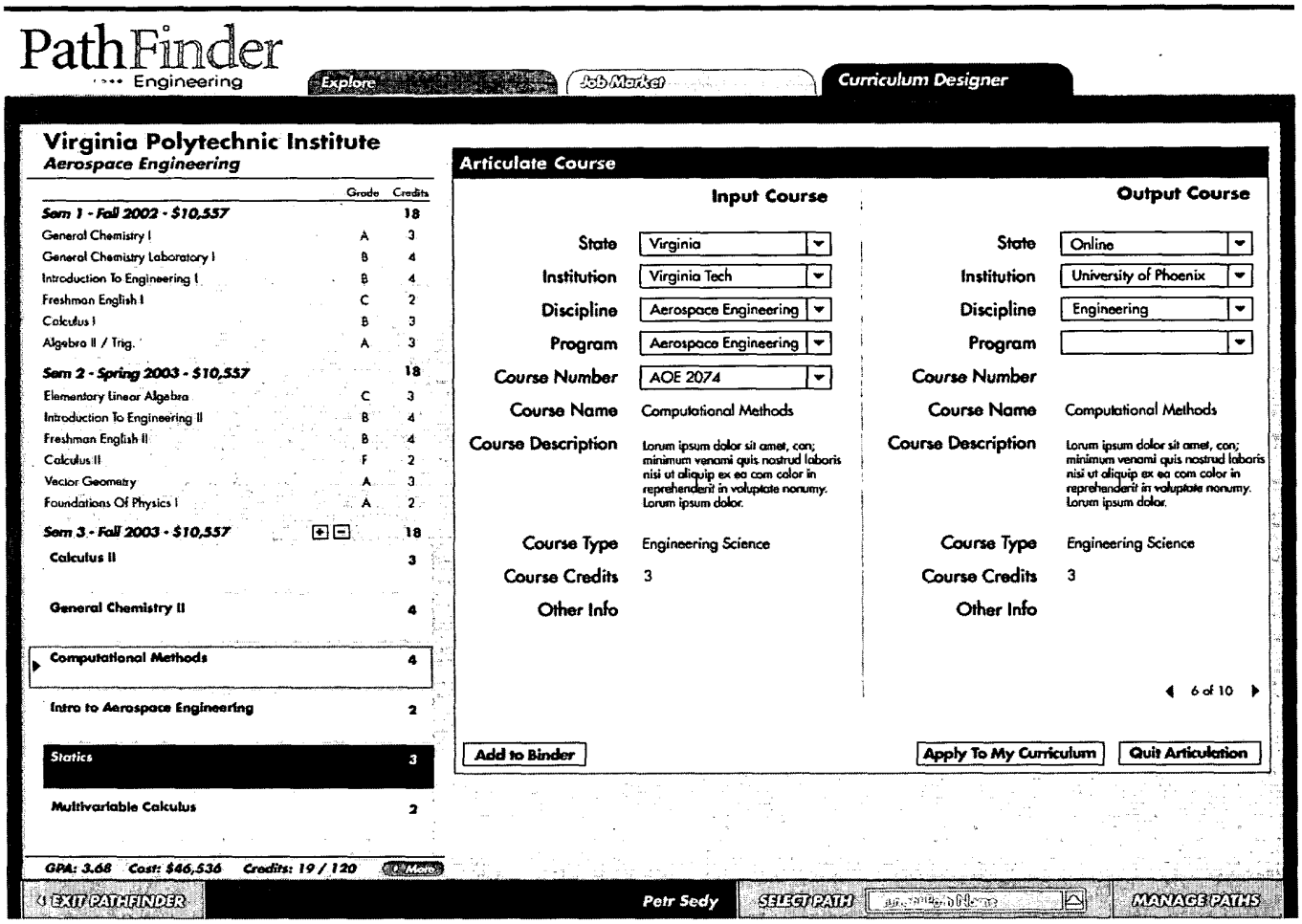

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Grade Credits
Sem 1 - Fall 2002 - $10,557 18
General Chemistry I A 3
General Chemistry Laboratory I B 4
Introduction To Engineering I B 4
Freshman English I C 2
Calculus I B 3
Algebra II / Trig. A 3
Sem 2 - Spring 2003 - $10,557 18
Elementary Linear Algebra C 3
Introduction To Engineering II B 4
Freshman English II B 4
Calculus II F 2
Vector Geometry A 3
Foundations Of Physics I A 2
Sem 3 - Fall 2003 - $10,557 18
Calculus II 3
General Chemistry II 4
Computational Methods 4
Intro to Aerospace Engineering 2
Statics 3
Multivariable Calculus 2
GPA: 3.68 Cost: $46,536 Credits: 19 / 120
Articulate Course
Input Course
Output Course
State Virginia
Institution Virginia Tech
Discipline Aerospace Engineering
Program Aerospace Engineering
Course Number AOE 2074
Course Name Computational Methods
Course Description Lorum ipsum dolor sit amet, con; minimum venami quis nostrud laboris nisi ut aliquip ex ea com color in reprehenderit in voluptate nonumy. Lorum ipsum dolor.
Course Type Engineering Science
Course Credits 3
Other Info
State Online
Institution University of Phoenix
Discipline Engineering
Program
Course Number
Course Name Computational Methods
Course Description Lorum ipsum dolor sit amet, con; minimum venami quis nostrud laboris nisi ut aliquip ex ea com color in reprehenderit in voluptate nonumy. Lorum ipsum dolor.
Course Type Engineering Science
Course Credits 3
Other Info
6 of 10
Add to Binder
Apply To My Curriculum
Quit Articulation
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11L

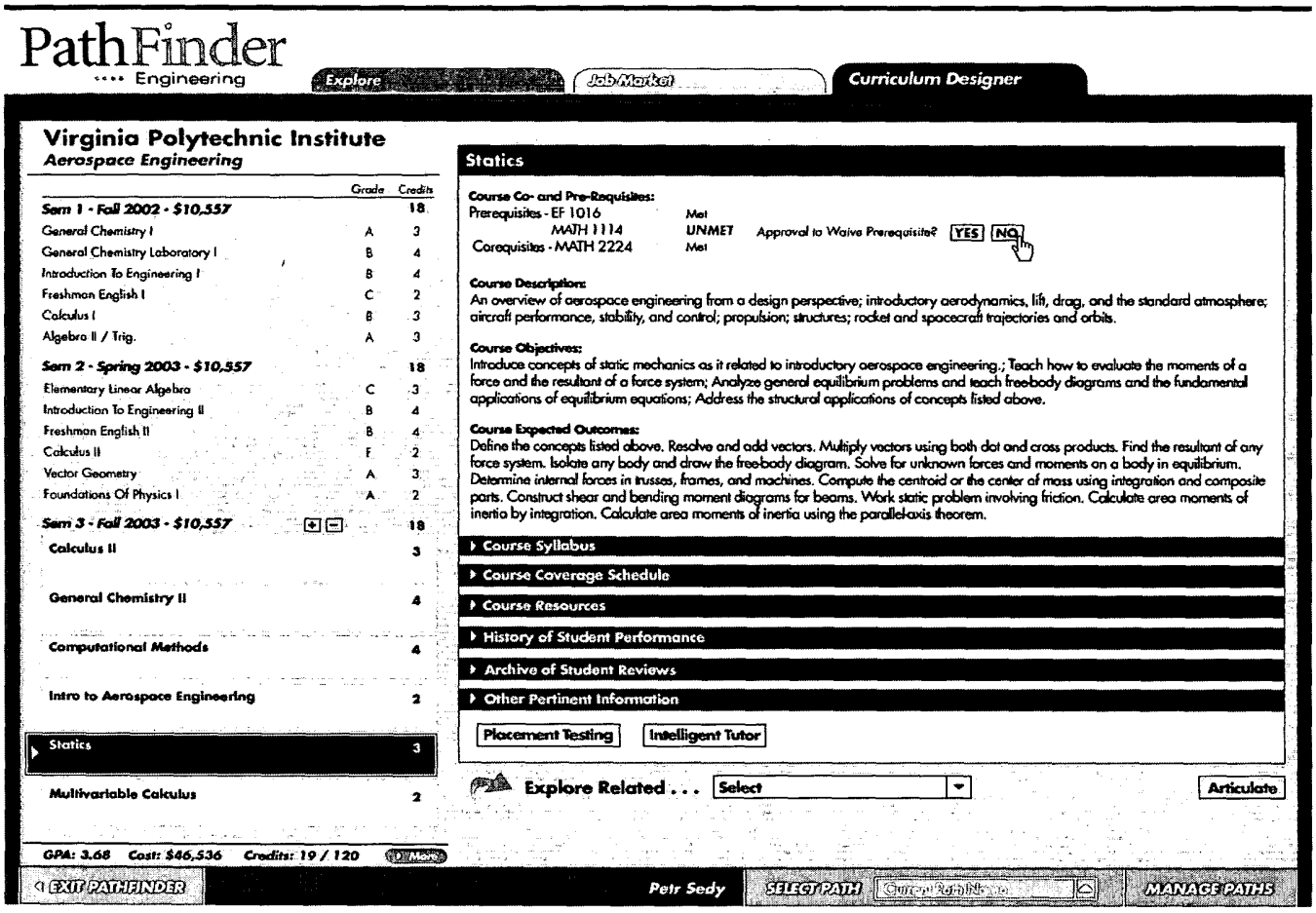

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Grade
Credits
Sem 1 - Fall 2002 - $10,557
18
General Chemistry I
A
3
General Chemistry Laboratory I
B
4
Introduction To Engineering I
B
4
Freshman English I
C
2
Calculus I
B
3
Algebra II / Trig.
A
3
Sem 2 - Spring 2003 - $10,557
18
Elementary Linear Algebra
C
3
Introduction To Engineering II
B
4
Freshman English II
B
4
Calculus II
F
2
Vector Geometry
A
3
Foundations Of Physics I
A
2
Sem 3 - Fall 2003 - $10,557
18
Calculus II
3
General Chemistry II
4
Computational Methods
4
Intro to Aerospace Engineering
2
Statics
3
Multivariable Calculus
2
GPA: 3.68
Cost: $46,536
Credits: 19 / 120
More
Statics
Course Co- and Pre-Requisites:
Prerequisites - EF 1016
Met
MATH 1114
UNMET
Approval to Waive Prerequisite?
YES
NO
Corequisites - MATH 2224
Met
Course Description:
An overview of aerospace engineering from a design perspective; introductory aerodynamics, lift, drag, and the standard atmosphere; aircraft performance, stability, and control; propulsion; structures; rocket and spacecraft trajectories and orbits.
Course Objectives:
Introduce concepts of static mechanics as it related to introductory aerospace engineering.; Teach how to evaluate the moments of a force and the resultant of a force system; Analyze general equilibrium problems and teach freebody diagrams and the fundamental applications of equilibrium equations; Address the structural applications of concepts listed above.
Course Expected Outcomes:
Define the concepts listed above. Resolve and add vectors. Multiply vectors using both dot and cross products. Find the resultant of any force system. Isolate any body and draw the free-body diagram. Solve for unknown forces and moments on a body in equilibrium. Determine internal forces in trusses, frames, and machines. Compute the centroid or the center of mass using integration and composite parts. Construct shear and bending moment diagrams for beams. Work static problem involving friction. Calculate area moments of inertia by integration. Calculate area moments of inertia using the parallel-axis theorem.
Course Syllabus
Course Coverage Schedule
Course Resources
History of Student Performance
Archive of Student Reviews
Other Pertinent Information
Placement Testing
Intelligent Tutor
Explore Related . . .
Select
Articulate
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11M

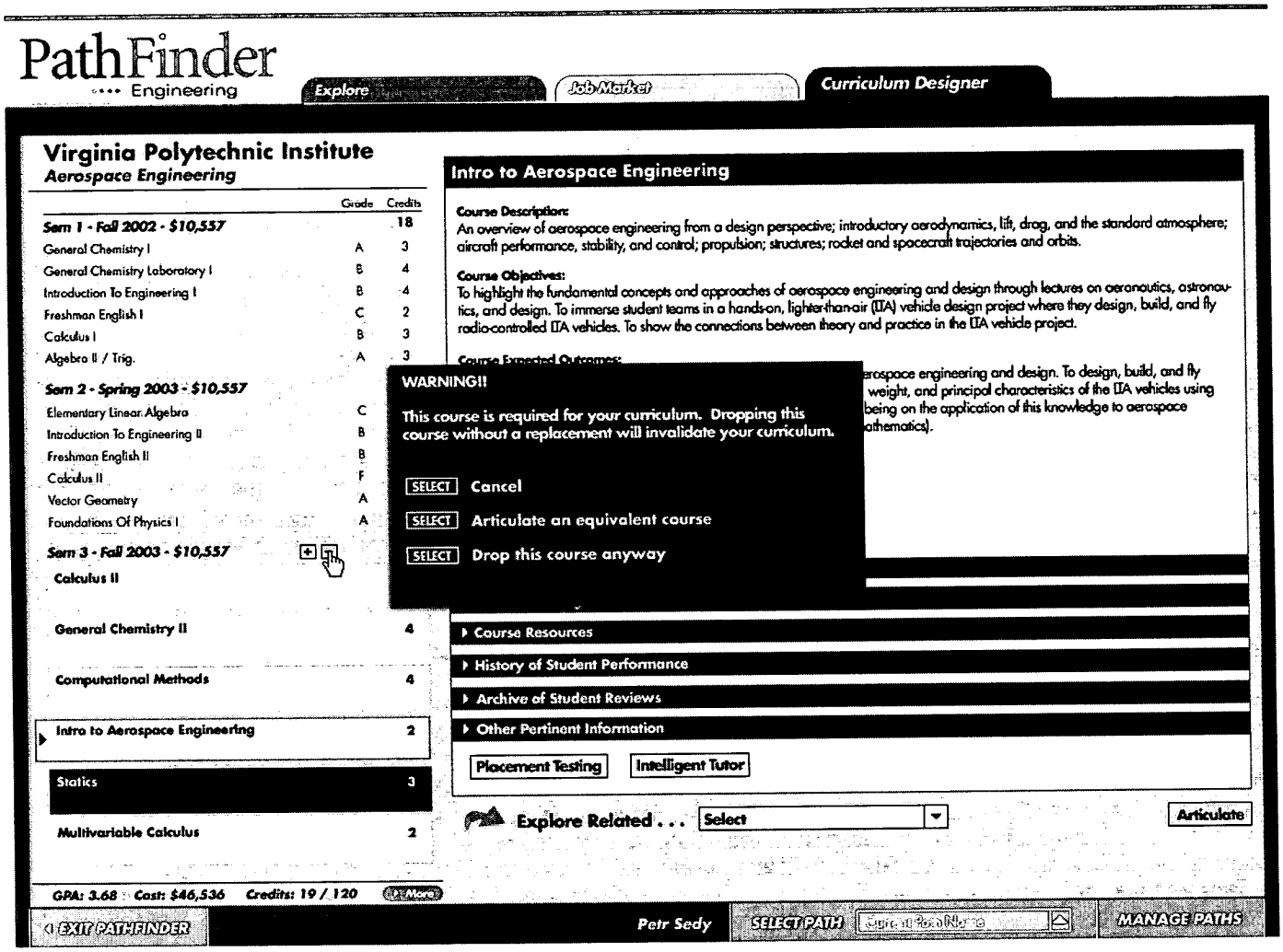

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Grade
Credits
Sem 1 - Fall 2002 - $10,557
18
General Chemistry I
A
3
General Chemistry Laboratory I
B
4
Introduction To Engineering I
B
4
Freshman English I
C
2
Calculus I
B
3
Algebra II / Trig.
A
3
Sem 2 - Spring 2003 - $10,557
Elementary Linear Algebra
C
Introduction To Engineering II
B
Freshman English II
B
Calculus II
F
Vector Geometry
A
Foundations Of Physics I
A
Sem 3 - Fall 2003 - $10,557
Calculus II
General Chemistry II
4
Computational Methods
4
Intro to Aerospace Engineering
2
Statics
3
Multivariable Calculus
2
GPA: 3.68
Cost: $46,536
Credits: 19 / 120
Intro to Aerospace Engineering
Course Description:
An overview of aerospace engineering from a design perspective; introductory aerodynamics, lift, drag, and the standard atmosphere; aircraft performance, stability, and control; propulsion; structures; rocket and spacecraft trajectories and orbits.
Course Objectives:
To highlight the fundamental concepts and approaches of aerospace engineering and design through lectures on aeronautics, astronautics, and design. To immerse student teams in a hands-on, lighter-than-air (LTA) vehicle design project where they design, build, and fly radio-controlled LTA vehicles. To show the connections between theory and practice in the LTA vehicle project.
Course Expected Outcomes:
erospace engineering and design. To design, build, and fly
weight, and principal characteristics of the LTA vehicles using
being on the application of this knowledge to aerospace
athematics).
WARNING!!
This course is required for your curriculum. Dropping this course without a replacement will invalidate your curriculum.
SELECT Cancel
SELECT Articulate an equivalent course
SELECT Drop this course anyway
Course Resources
History of Student Performance
Archive of Student Reviews
Other Pertinent Information
Placement Testing
Intelligent Tutor
Explore Related . . .
Select
Articulate
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11N

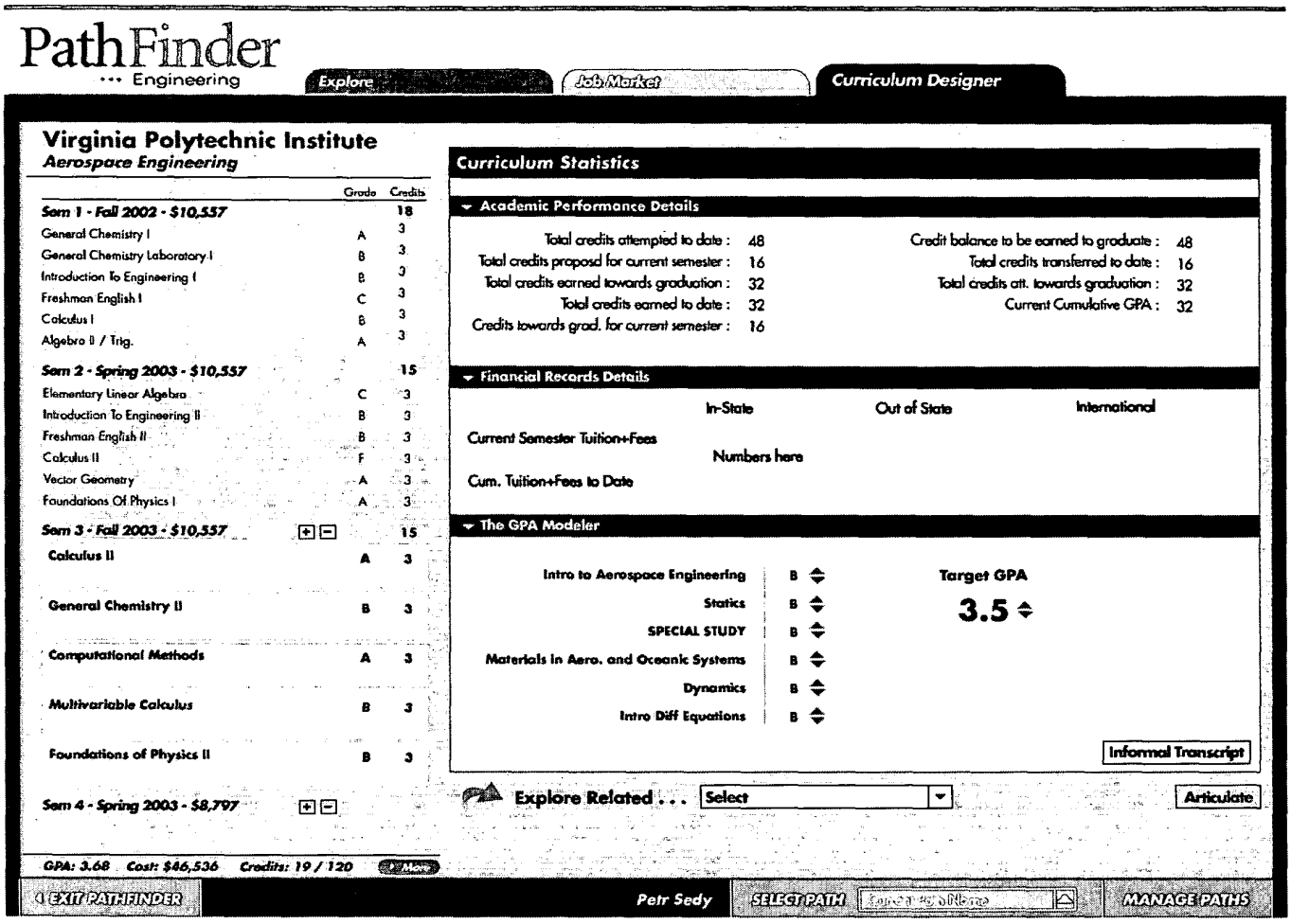

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Grade
Credits
Sem 1 - Fall 2002 - $10,557
18
General Chemistry I
A
3
General Chemistry Laboratory I
B
3
Introduction To Engineering I
B
3
Freshman English I
C
3
Calculus I
B
3
Algebra II / Trig.
A
3
Sem 2 - Spring 2003 - $10,557
15
Elementary Linear Algebra
C
3
Introduction To Engineering II
B
3
Freshman English II
B
3
Calculus II
F
3
Vector Geometry
A
3
Foundations Of Physics I
A
3
Sem 3 - Fall 2003 - $10,557
15
Calculus II
A
3
General Chemistry II
B
3
Computational Methods
A
3
Multivariable Calculus
B
3
Foundations of Physics II
B
3
Sem 4 - Spring 2003 - $8,797
GPA: 3.68
Cost: $46,536
Credits: 19 / 120
Curriculum Statistics
Academic Performance Details
Total credits attempted to date : 48
Total credits proposd for current semester : 16
Total credits earned towards graduation : 32
Total credits earned to date : 32
Credits towards grad. for current semester : 16
Credit balance to be earned to graduate : 48
Total credits transferred to date : 16
Total credits att. towards graduation : 32
Current Cumulative GPA : 32
Financial Records Details
In-State
Out of State
International
Current Semester Tuition+Fees
Numbers here
Cum. Tuition+Fees to Date
The GPA Modeler
Intro to Aerospace Engineering
B
Statics
B
SPECIAL STUDY
B
Materials in Aero. and Oceanic Systems
B
Dynamics
B
Intro Diff Equations
B
Target GPA
3.5
Informal Transcript
Explore Related . . .
Select
Articulate
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11O

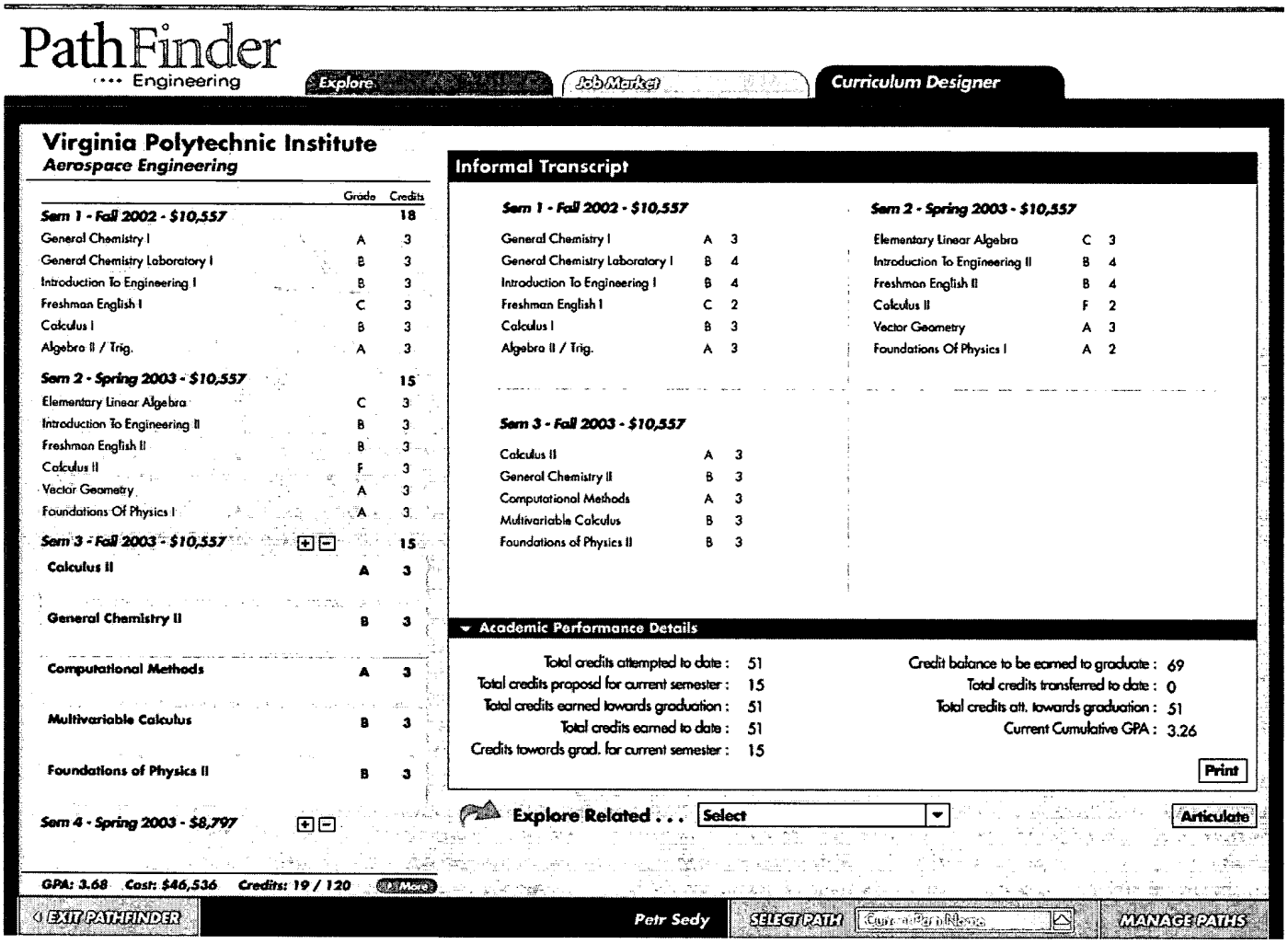

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Grade Credits
Sem 1 - Fall 2002 - $10,557 18
General Chemistry I A 3
General Chemistry Laboratory I B 3
Introduction To Engineering I B 3
Freshman English I C 3
Calculus I B 3
Algebra II / Trig. A 3
Sem 2 - Spring 2003 - $10,557 15
Elementary Linear Algebra C 3
Introduction To Engineering II B 3
Freshman English II B 3
Calculus II F 3
Vector Geometry A 3
Foundations Of Physics I A 3
Sem 3 - Fall 2003 - $10,557 15
Calculus II A 3
General Chemistry II B 3
Computational Methods A 3
Multivariable Calculus B 3
Foundations of Physics II B 3
Sem 4 - Spring 2003 - $8,797
GPA: 3.68 Cost: $46,536 Credits: 19 / 120
More
Informal Transcript
Sem 1 - Fall 2002 - $10,557
General Chemistry I A 3
General Chemistry Laboratory I B 4
Introduction To Engineering I B 4
Freshman English I C 2
Calculus I B 3
Algebra II / Trig. A 3
Sem 2 - Spring 2003 - $10,557
Elementary Linear Algebra C 3
Introduction To Engineering II B 4
Freshman English II B 4
Calculus II F 2
Vector Geometry A 3
Foundations Of Physics I A 2
Sem 3 - Fall 2003 - $10,557
Calculus II A 3
General Chemistry II B 3
Computational Methods A 3
Multivariable Calculus B 3
Foundations of Physics II B 3
Academic Performance Details
Total credits attempted to date : 51
Total credits proposd for current semester : 15
Total credits earned towards graduation : 51
Total credits earned to date : 51
Credits towards grad. for current semester : 15
Credit balance to be earned to graduate : 69
Total credits transferred to date : 0
Total credits att. towards graduation : 51
Current Cumulative GPA : 3.26
Print
Explore Related . . .
Select
Articulate
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11P

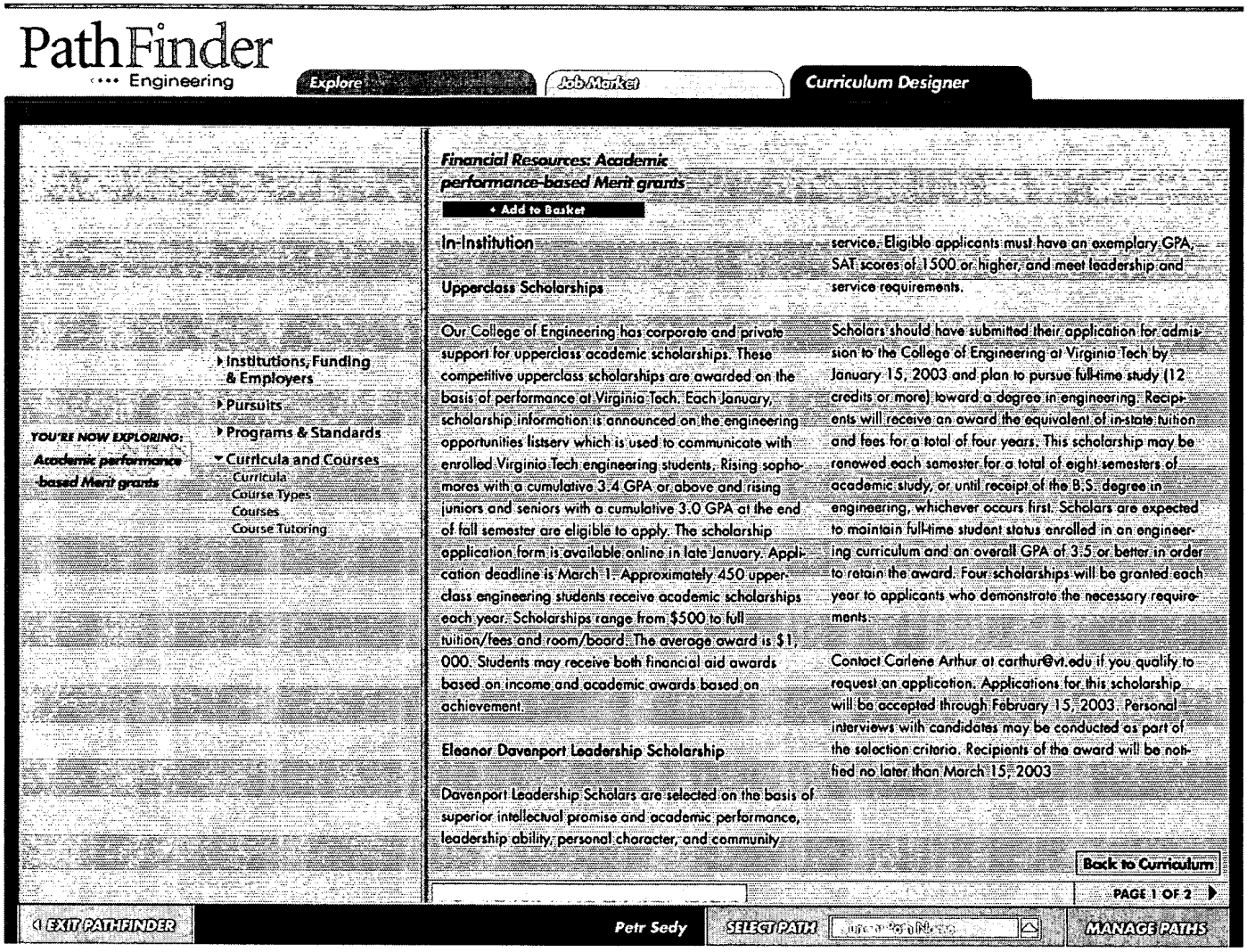

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
YOU'RE NOW EXPLORING:
Academic performance based Merit grants
Institutions, Funding & Employers
Pursuits
Programs & Standards
Curricula and Courses
Curricula
Course Types
Courses
Course Tutoring
Financial Resources: Academic performance-based Merit grants
+ Add to Basket
In-Institution
Upperclass Scholarships
Our College of Engineering has corporate and private support for upperclass academic scholarships. These competitive upperclass scholarships are awarded on the basis of performance at Virginia Tech. Each January, scholarship information is announced on the engineering opportunities listserv which is used to communicate with enrolled Virginia Tech engineering students. Rising sophomores with a cumulative 3.4 GPA or above and rising juniors and seniors with a cumulative 3.0 GPA at the end of fall semester are eligible to apply. The scholarship application form is available online in late January. Application deadline is March 1. Approximately 450 upperclass engineering students receive academic scholarships each year. Scholarships range from $500 to full tuition/fees and room/board. The average award is $1,000. Students may receive both financial aid awards based on income and academic awards based on achievement.
Eleanor Davenport Leadership Scholarship
Davenport Leadership Scholars are selected on the basis of superior intellectual promise and academic performance, leadership ability, personal character, and community service. Eligible applicants must have an exemplary GPA, SAT scores of 1500 or higher, and meet leadership and service requirements.
Scholars should have submitted their application for admission to the College of Engineering at Virginia Tech by January 15, 2003 and plan to pursue full-time study (12 credits or more) toward a degree in engineering. Recipients will receive an award the equivalent of in-state tuition and fees for a total of four years. This scholarship may be renewed each semester for a total of eight semesters of academic study, or until receipt of the B.S. degree in engineering, whichever occurs first. Scholars are expected to maintain full-time student status enrolled in an engineering curriculum and an overall GPA of 3.5 or better in order to retain the award. Four scholarships will be granted each year to applicants who demonstrate the necessary requirements.
Contact Carlene Arthur at carthur@vt.edu if you qualify to request an application. Applications for this scholarship will be accepted through February 15, 2003. Personal interviews with candidates may be conducted as part of the selection criteria. Recipients of the award will be notified no later than March 15, 2003
Back to Curriculum
PAGE 1 OF 2
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11Q

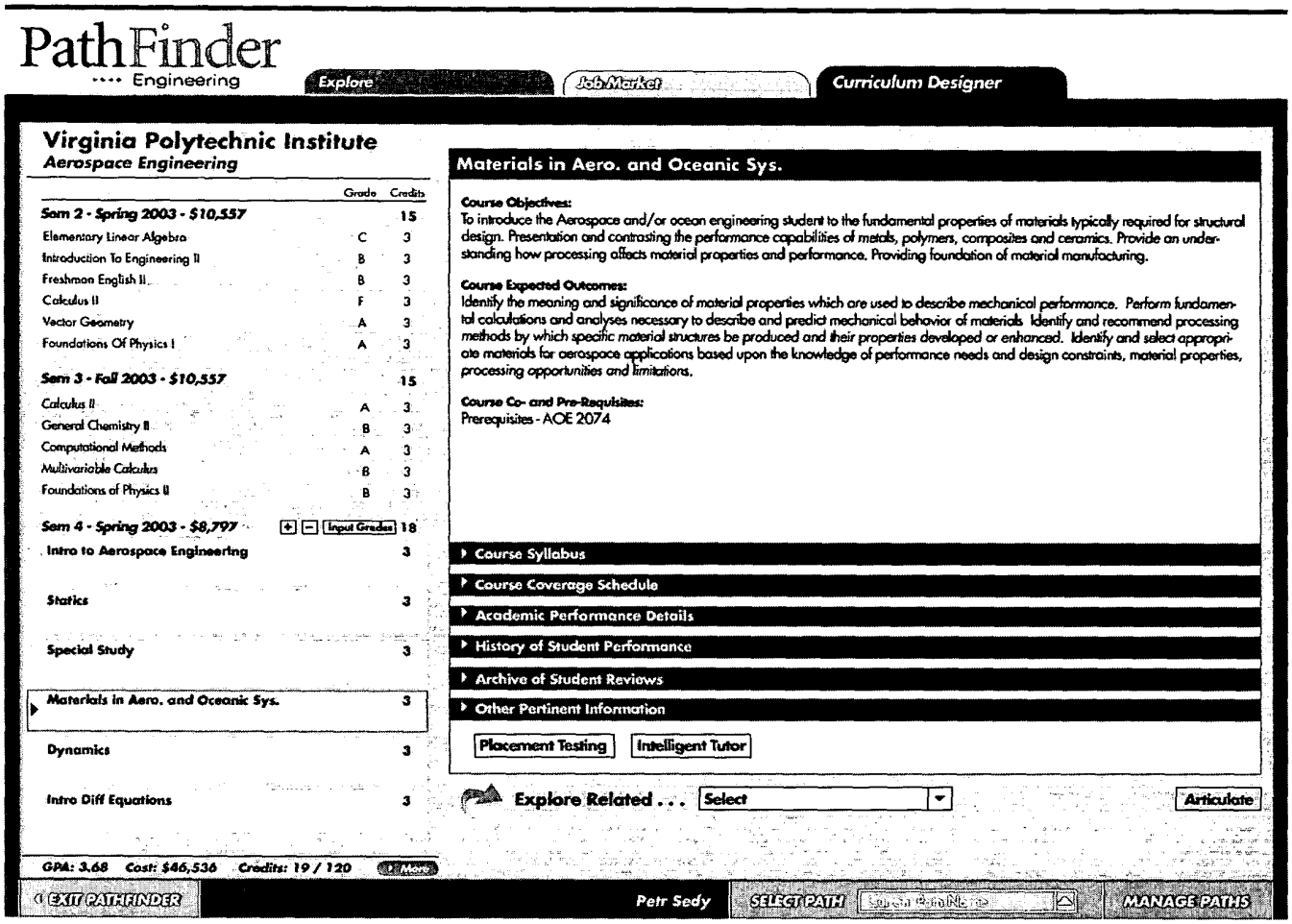

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Grade
Credits
Sem 2 - Spring 2003 - $10,557
15
Elementary Linear Algebra
C
3
Introduction To Engineering II
B
3
Freshman English II
B
3
Calculus II
F
3
Vector Geometry
A
3
Foundations Of Physics I
A
3
Sem 3 - Fall 2003 - $10,557
15
Calculus II
A
3
General Chemistry II
B
3
Computational Methods
A
3
Multivariable Calculus
B
3
Foundations of Physics II
B
3
Sem 4 - Spring 2003 - $8,797
Input Grades
18
Intro to Aerospace Engineering
3
Statics
3
Special Study
3
Materials in Aero. and Oceanic Sys.
3
Dynamics
3
Intro Diff Equations
3
GPA: 3.68
Cost: $46,536
Credits: 19 / 120
Materials in Aero. and Oceanic Sys.
Course Objectives:
To introduce the Aerospace and/or ocean engineering student to the fundamental properties of materials typically required for structural design. Presentation and contrasting the performance capabilities of metals, polymers, composites and ceramics. Provide an understanding how processing affects material properties and performance. Providing foundation of material manufacturing.
Course Expected Outcomes:
Identify the meaning and significance of material properties which are used to describe mechanical performance. Perform fundamental calculations and analyses necessary to describe and predict mechanical behavior of materials. Identify and recommend processing methods by which specific material structures be produced and their properties developed or enhanced. Identify and select appropriate materials for aerospace applications based upon the knowledge of performance needs and design constraints, material properties, processing opportunities and limitations.
Course Co- and Pre-Requisites:
Prerequisites - AOE 2074
Course Syllabus
Course Coverage Schedule
Academic Performance Details
History of Student Performance
Archive of Student Reviews
Other Pertinent Information
Placement Testing
Intelligent Tutor
Explore Related . . .
Select
Articulate
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11R

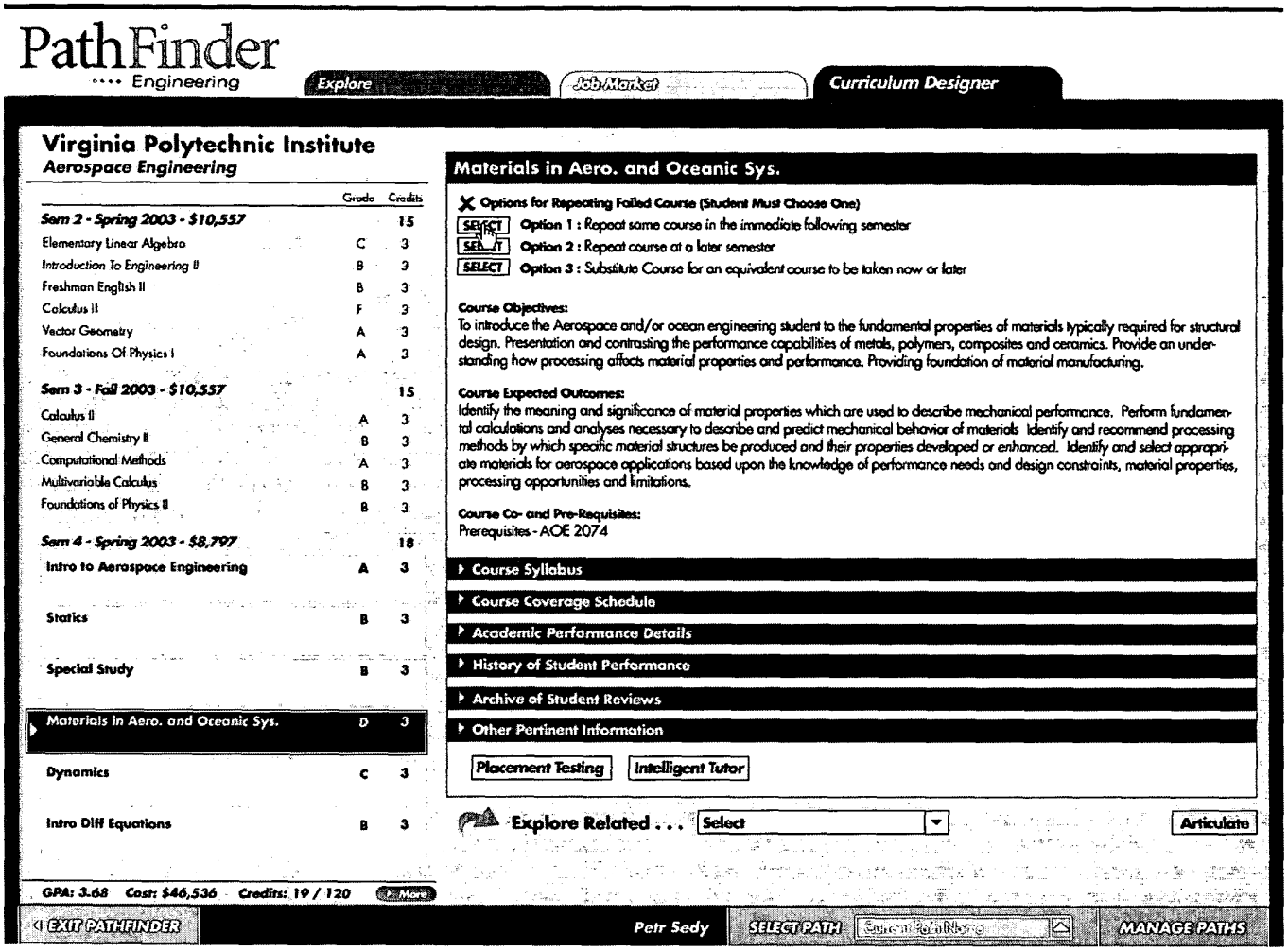

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
Virginia Polytechnic Institute
Aerospace Engineering
Grade Credits
Sem 2 - Spring 2003 - $10,557 15
Elementary Linear Algebra C 3
Introduction To Engineering II B 3
Freshman English II B 3
Calculus II F 3
Vector Geometry A 3
Foundations Of Physics I A 3
Sem 3 - Fall 2003 - $10,557 15
Calculus II A 3
General Chemistry II B 3
Computational Methods A 3
Multivariable Calculus B 3
Foundations of Physics II B 3
Sem 4 - Spring 2003 - $8,797 18
Intro to Aerospace Engineering A 3
Statics B 3
Special Study B 3
Materials in Aero. and Oceanic Sys. D 3
Dynamics C 3
Intro Diff Equations B 3
GPA: 3.68 Cost: $46,536 Credits: 19 / 120
More
Materials in Aero. and Oceanic Sys.
Options for Repeating Failed Course (Student Must Choose One)
SELECT Option 1 : Repeat same course in the immediate following semester
SELECT Option 2 : Repeat course at a later semester
SELECT Option 3 : Substitute Course for an equivalent course to be taken now or later
Course Objectives:
To introduce the Aerospace and/or ocean engineering student to the fundamental properties of materials typically required for structural design. Presentation and contrasting the performance capabilities of metals, polymers, composites and ceramics. Provide an understanding how processing affects material properties and performance. Providing foundation of material manufacturing.
Course Expected Outcomes:
Identify the meaning and significance of material properties which are used to describe mechanical performance. Perform fundamental calculations and analyses necessary to describe and predict mechanical behavior of materials Identify and recommend processing methods by which specific material structures be produced and their properties developed or enhanced. Identify and select appropriate materials for aerospace applications based upon the knowledge of performance needs and design constraints, material properties, processing opportunities and limitations.
Course Co- and Pre-Requisites:
Prerequisites - AOE 2074
Course Syllabus
Course Coverage Schedule
Academic Performance Details
History of Student Performance
Archive of Student Reviews
Other Pertinent Information
Placement Testing
Intelligent Tutor
Explore Related . . .
Select
Articulate
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 11S

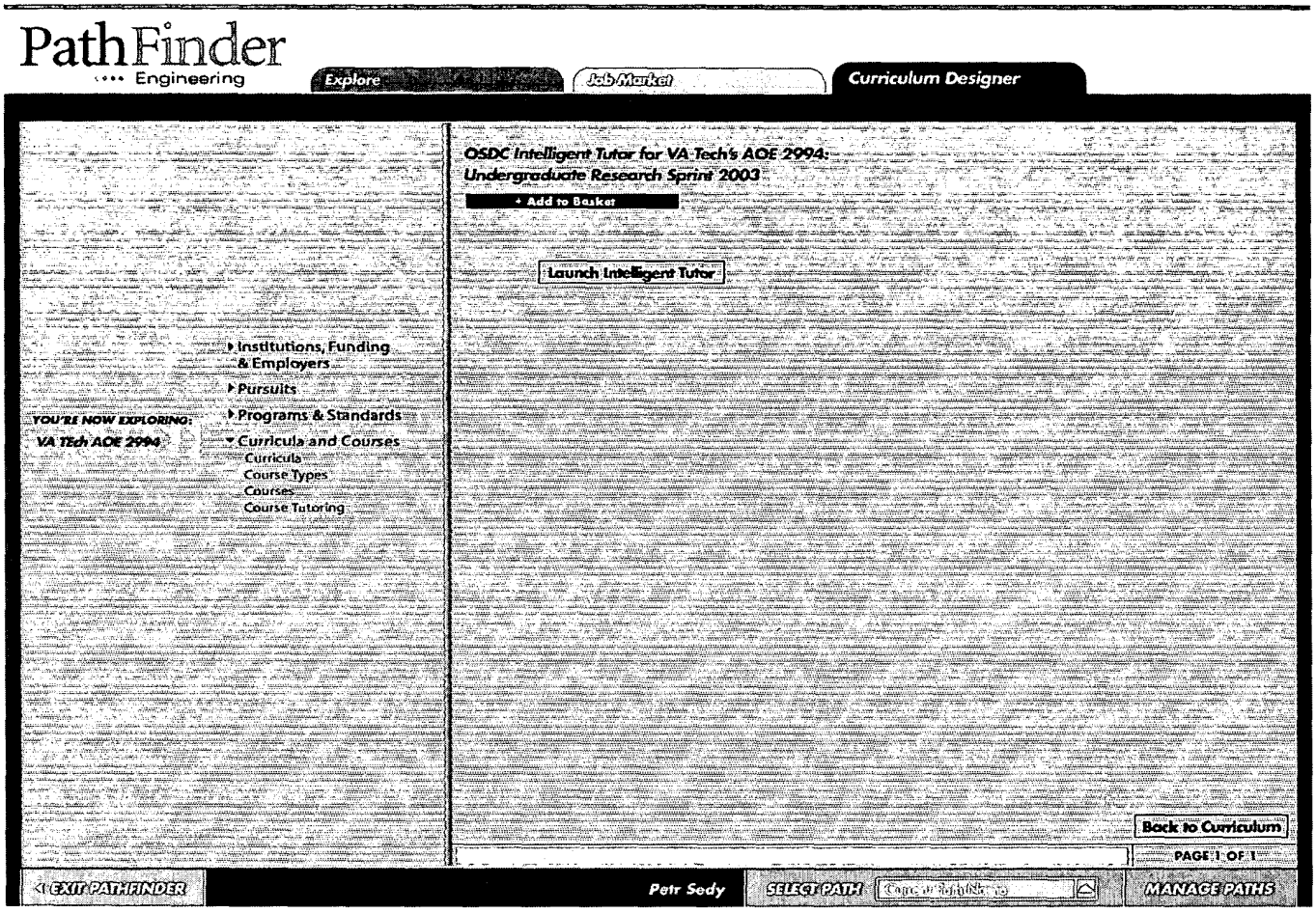

PathFinder
Engineering
Explore
Job Market
Curriculum Designer
OSDC Intelligent Tutor for VA Tech's AOE 2994:
Undergraduate Research Sprint 2003
+ Add to Basket
Launch Intelligent Tutor
Institutions, Funding & Employers
Pursuits
Programs & Standards
Curricula and Courses
Curricula
Course Types
Courses
Course Tutoring
YOU'RE NOW EXPLORING:
VA TEch AOE 2994
Back to Curriculum
PAGE 1 OF 1
EXIT PATHFINDER
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 12A

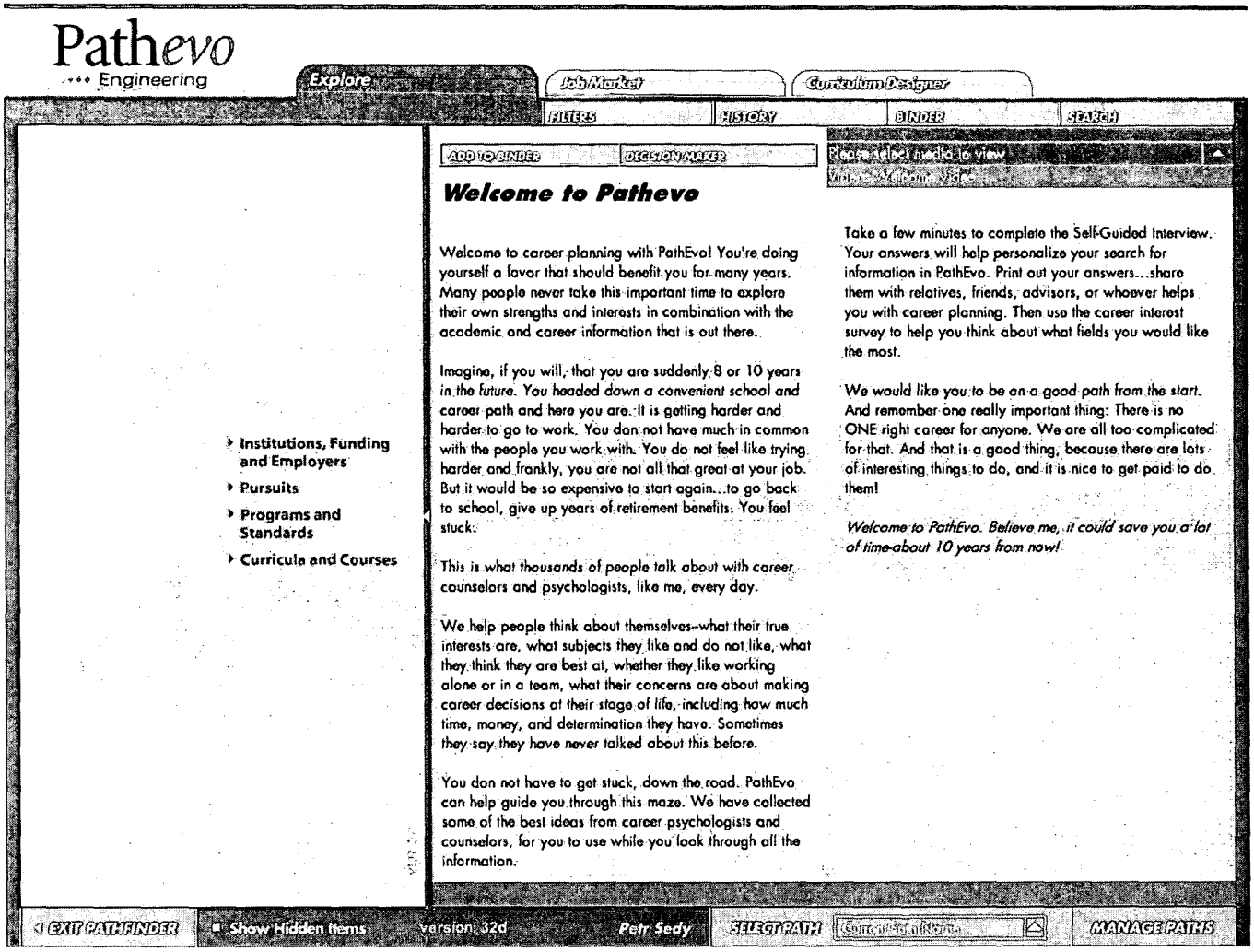

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
FILTERS
HISTORY
BINDER
SEARCH
ADD TO BINDER
DECISION MAKER
Welcome to Pathevo
Welcome to career planning with PathEvo! You're doing yourself a favor that should benefit you for many years. Many people never take this important time to explore their own strengths and interests in combination with the academic and career information that is out there.
Imagine, if you will, that you are suddenly 8 or 10 years in the future. You headed down a convenient school and career path and here you are. It is getting harder and harder to go to work. You don not have much in common with the people you work with. You do not feel like trying harder and frankly, you are not all that great at your job. But it would be so expensive to start again...to go back to school, give up years of retirement benefits. You feel stuck.
This is what thousands of people talk about with career counselors and psychologists, like me, every day.
We help people think about themselves--what their true interests are, what subjects they like and do not like, what they think they are best at, whether they like working alone or in a team, what their concerns are about making career decisions at their stage of life, including how much time, money, and determination they have. Sometimes they say they have never talked about this before.
You don not have to get stuck, down the road. PathEvo can help guide you through this maze. We have collected some of the best ideas from career psychologists and counselors, for you to use while you look through all the information.
Take a few minutes to complete the Self-Guided Interview. Your answers will help personalize your search for information in PathEvo. Print out your answers...share them with relatives, friends, advisors, or whoever helps you with career planning. Then use the career interest survey to help you think about what fields you would like the most.
We would like you to be on a good path from the start. And remember one really important thing: There is no ONE right career for anyone. We are all too complicated for that. And that is a good thing, because there are lots of interesting things to do, and it is nice to get paid to do them!
Welcome to PathEvo. Believe me, it could save you a lot of time about 10 years from now!
Institutions, Funding and Employers
Pursuits
Programs and Standards
Curricula and Courses
EXIT PATHFINDER
Show Hidden Items
version: 32d
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 12B

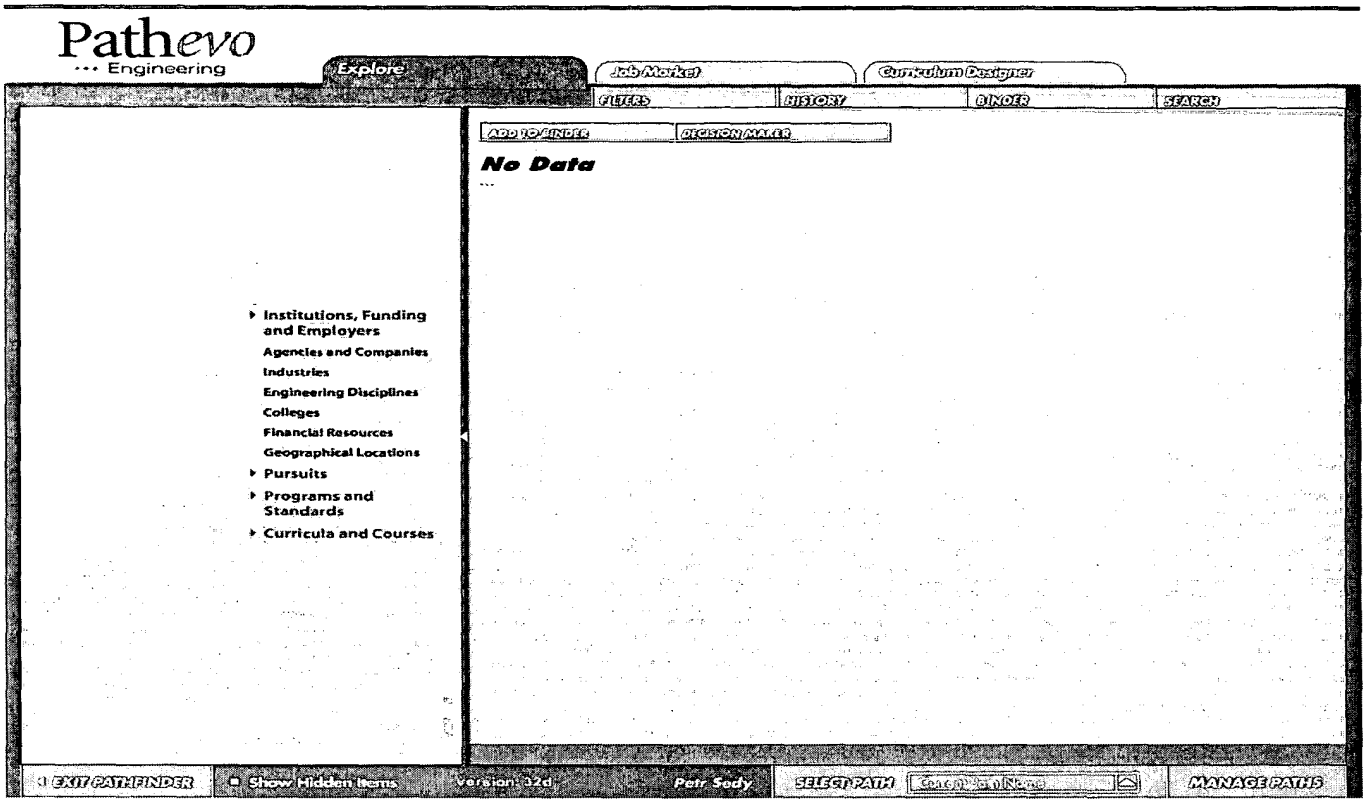

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
FILTERS
HISTORY
BINDER
SEARCH
ADD TO BINDER
DECISION MAKER
No Data
Institutions, Funding and Employers
Agencies and Companies
Industries
Engineering Disciplines
Colleges
Financial Resources
Geographical Locations
Pursuits
Programs and Standards
Curricula and Courses
EXIT PATHFINDER
Show Hidden Items
Version 32d
Petr Sody
SELECT PATH
MANAGE PATHS

FIGURE 12C

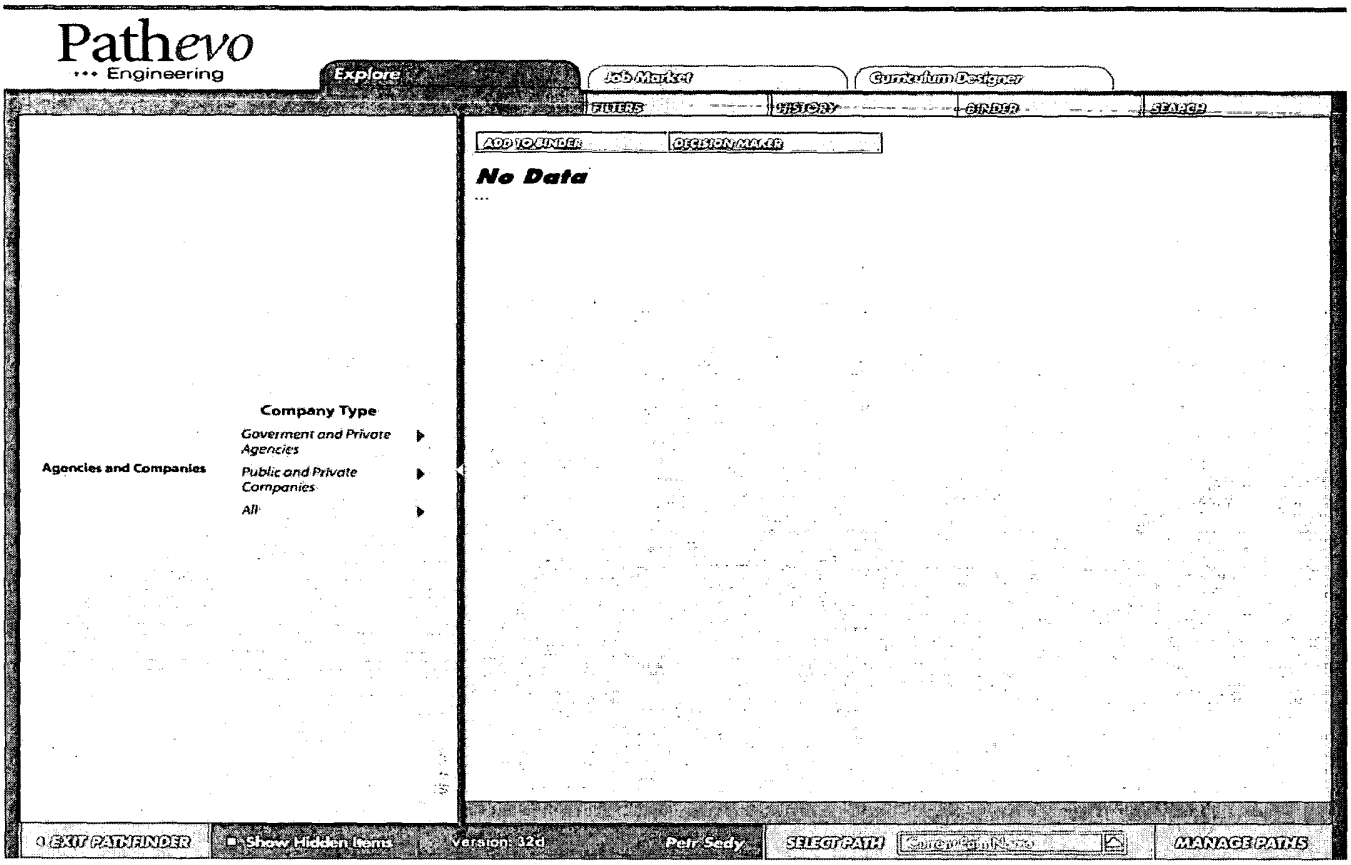

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
FILTERS
HISTORY
BINDER
SEARCH
ADD TO BINDER
DECISION MAKER
No Data
Company Type
Government and Private Agencies
Agencies and Companies
Public and Private Companies
All
EXIT PATHFINDER
Show Hidden Items
Version: 32d
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 12D

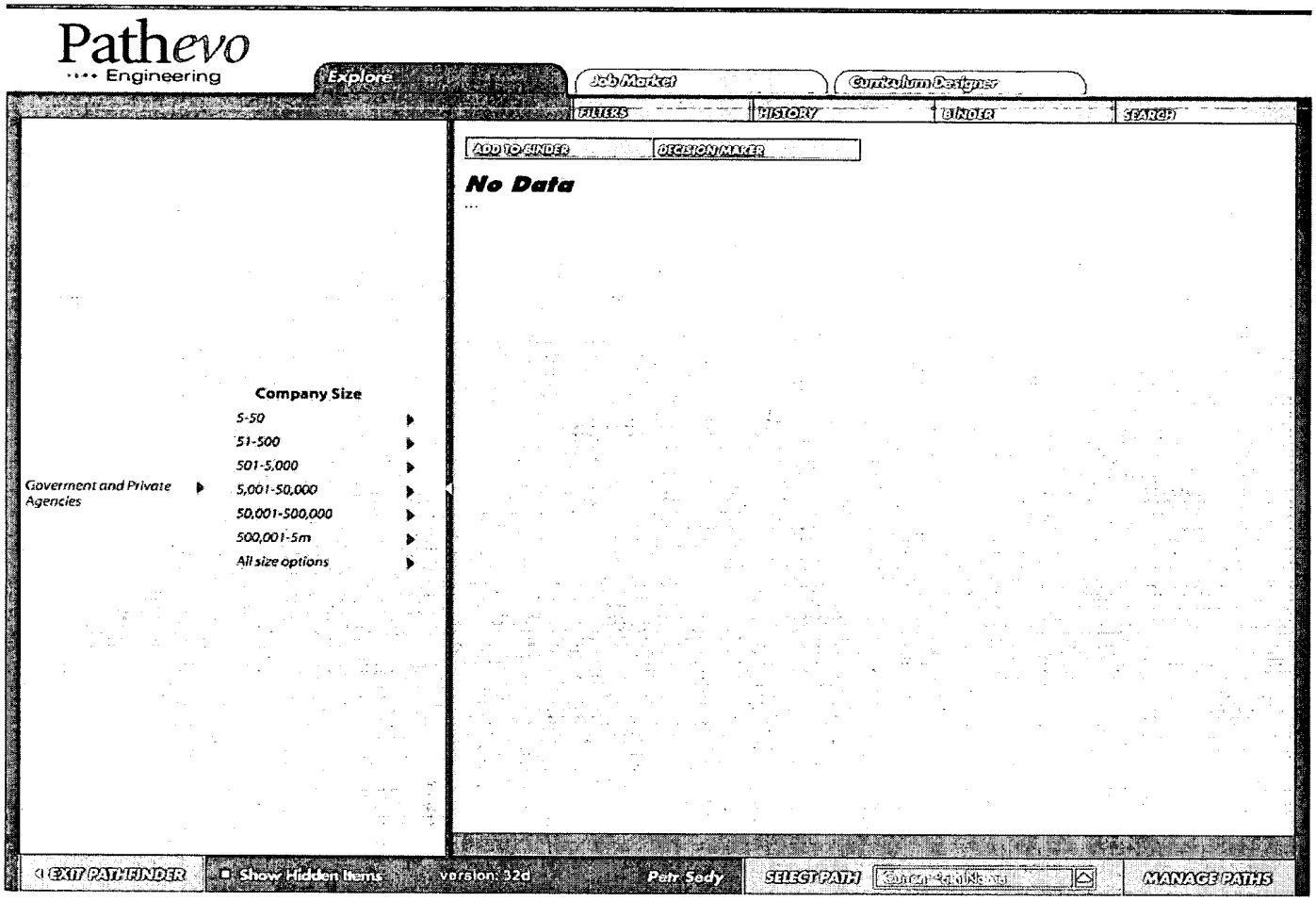

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
FILTERS
HISTORY
BINDER
SEARCH
ADD TO BINDER
DECISION MAKER
No Data
Company Size
5-50
51-500
501-5,000
Government and Private Agencies
5,001-50,000
50,001-500,000
500,001-5m
All size options
EXIT PATHFINDER
Show Hidden Items
Version: 32d
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 12E

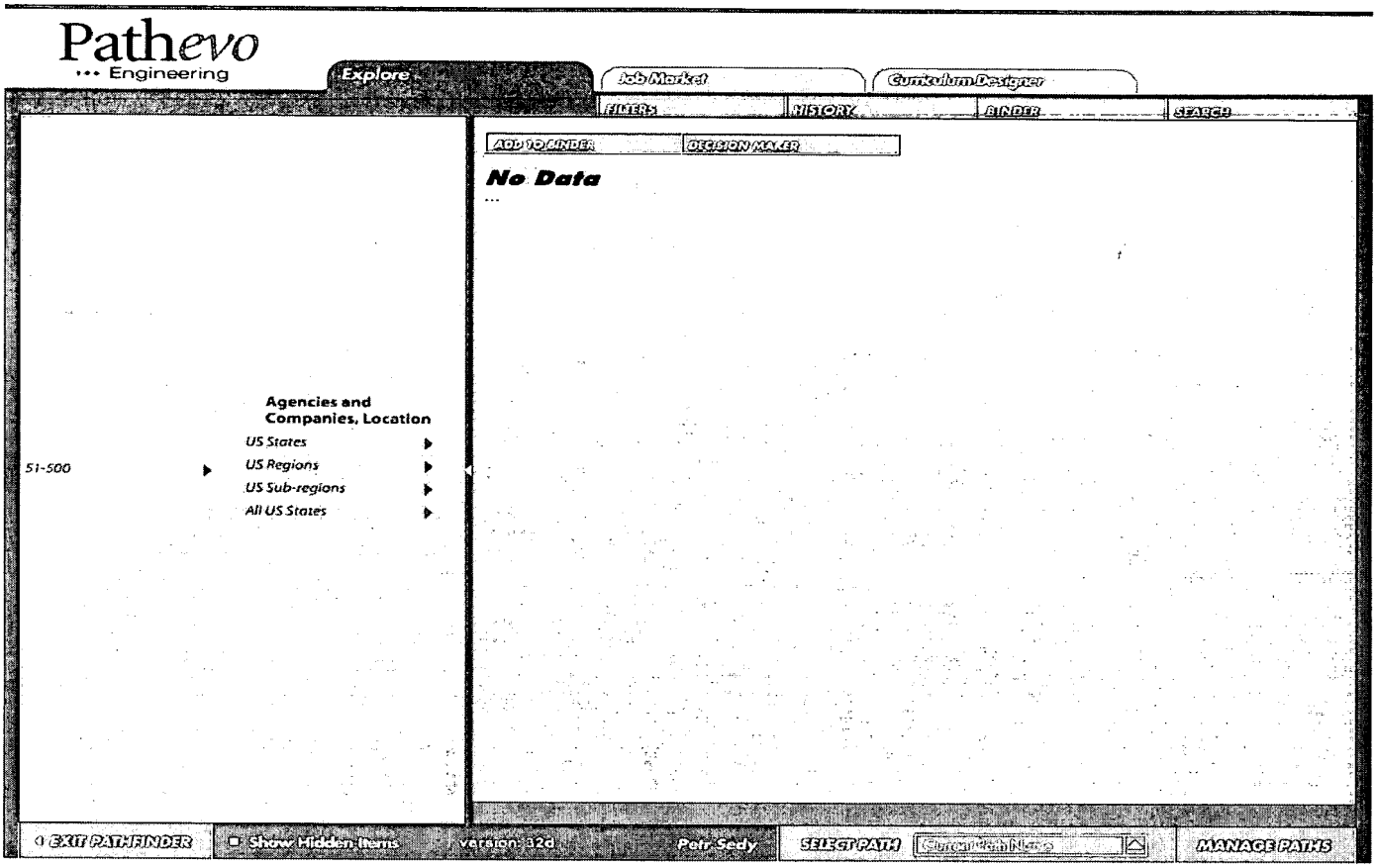

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
FILTERS
HISTORY
BINDER
SEARCH
ADD TO BINDER
DECISION MAKER
No Data
Agencies and Companies, Location
US States
51-500
US Regions
US Sub-regions
All US States
EXIT PATHFINDER
Show Hidden Items
version 32d
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 12F

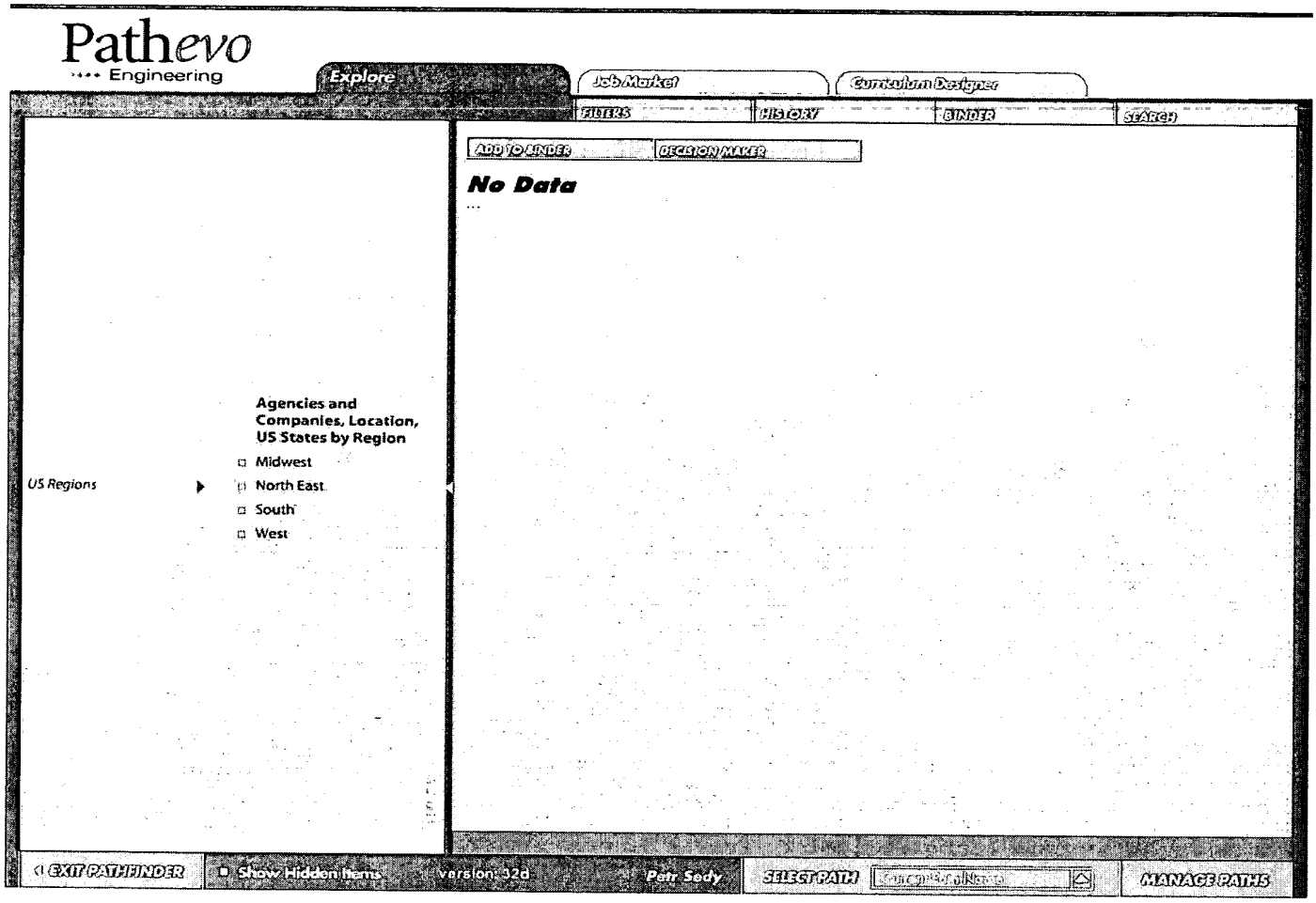

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
FILTERS
HISTORY
BINDER
SEARCH
ADD TO BINDER
DECISION MAKER
No Data
Agencies and Companies, Location, US States by Region
US Regions
Midwest
North East
South
West
EXIT PATHFINDER
Show Hidden Items
version: 32d
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 12G

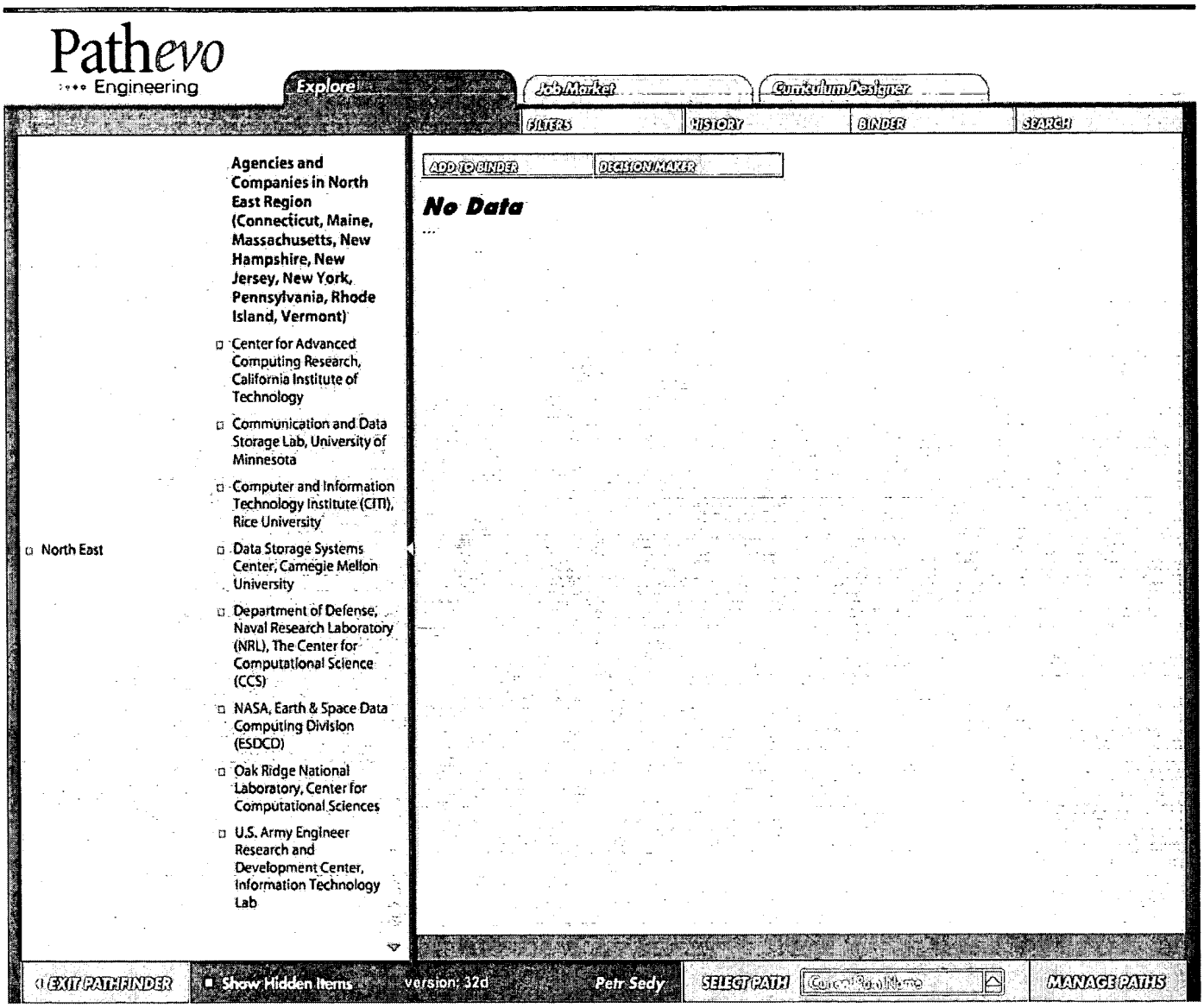

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
FILTERS
HISTORY
BINDER
SEARCH
Agencies and Companies in North East Region (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont)
Center for Advanced Computing Research, California Institute of Technology
Communication and Data Storage Lab, University of Minnesota
Computer and Information Technology Institute (CITI), Rice University
North East
Data Storage Systems Center, Carnegie Mellon University
Department of Defense, Naval Research Laboratory (NRL), The Center for Computational Science (CCS)
NASA, Earth & Space Data Computing Division (ESDCD)
Oak Ridge National Laboratory, Center for Computational Sciences
U.S. Army Engineer Research and Development Center, Information Technology Lab
ADD TO BINDER
DECISION MAKER
No Data
EXIT PATHFINDER
Show Hidden Items
version: 32d
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 12H

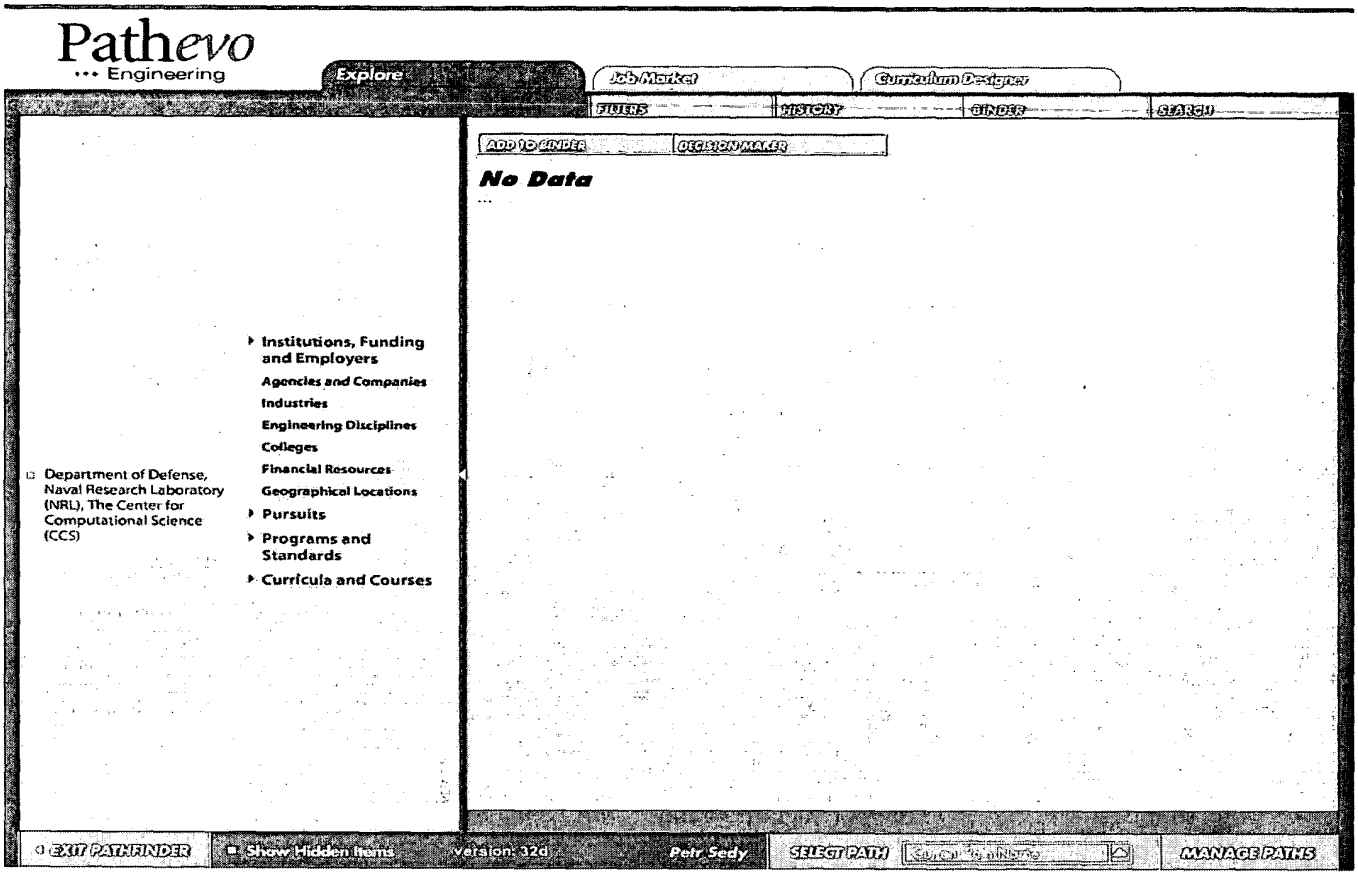

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
FILTERS
HISTORY
GINDER
SEARCH
ADD TO GINDER
DECISION MAKER
No Data
Institutions, Funding and Employers
Agencies and Companies
Industries
Engineering Disciplines
Colleges
Financial Resources
Geographical Locations
Pursuits
Programs and Standards
Curricula and Courses
Department of Defense, Naval Research Laboratory (NRL), The Center for Computational Science (CCS)
EXIT PATHFINDER
Show Hidden Items
Version: 32d
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 12I

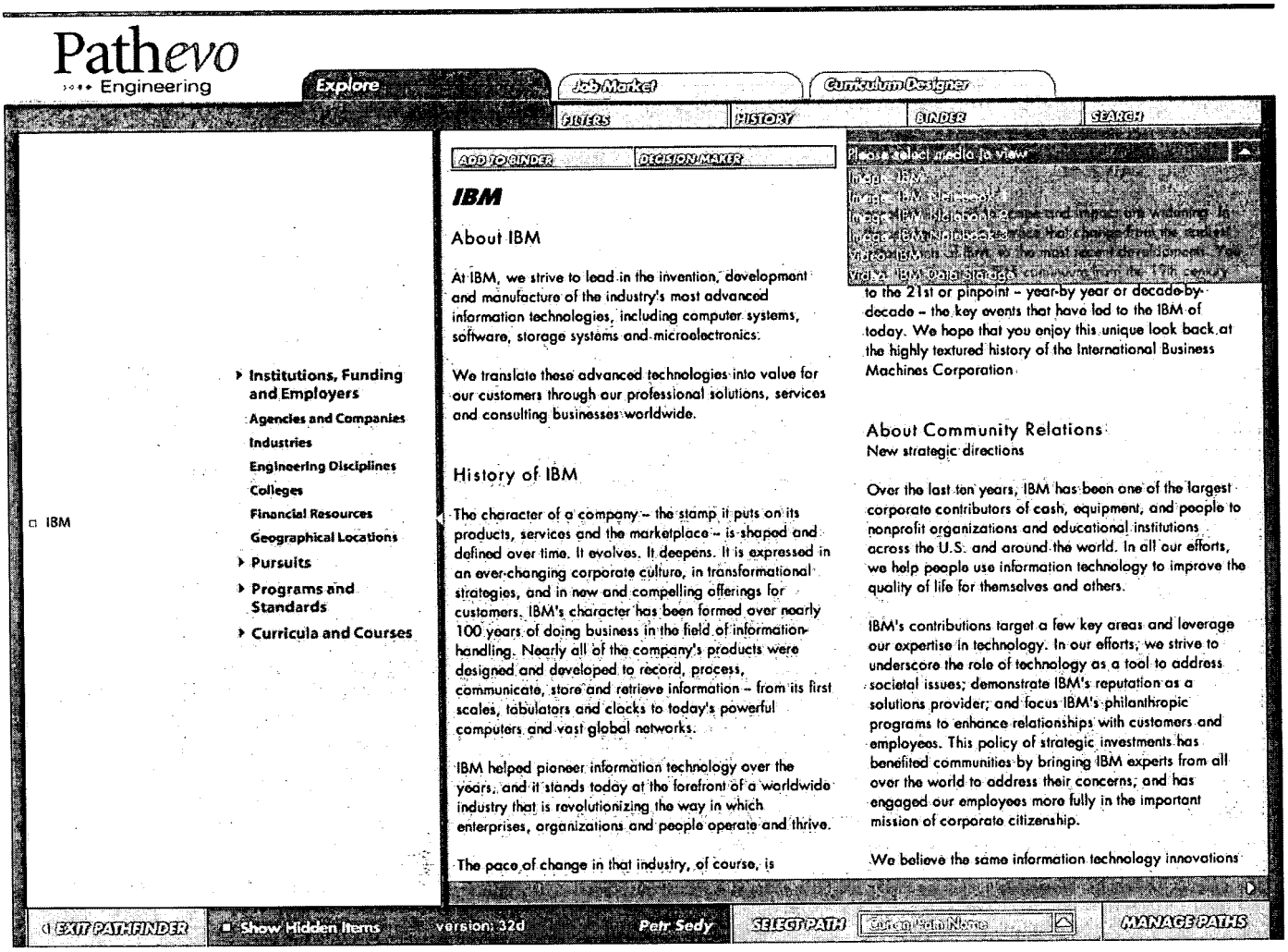

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
FILTERS
HISTORY
BINDER
SEARCH
ADD TO BINDER
DECISION MAKER
Please select media to view
IBM
Institutions, Funding and Employers
Agencies and Companies
Industries
Engineering Disciplines
Colleges
Financial Resources
Geographical Locations
Pursuits
Programs and Standards
Curricula and Courses
IBM
About IBM
At IBM, we strive to lead in the invention, development and manufacture of the industry's most advanced information technologies, including computer systems, software, storage systems and microelectronics.
We translate these advanced technologies into value for our customers through our professional solutions, services and consulting businesses worldwide.
History of IBM
The character of a company – the stamp it puts on its products, services and the marketplace – is shaped and defined over time. It evolves. It deepens. It is expressed in an ever-changing corporate culture, in transformational strategies, and in new and compelling offerings for customers. IBM's character has been formed over nearly 100 years of doing business in the field of information-handling. Nearly all of the company's products were designed and developed to record, process, communicate, store and retrieve information – from its first scales, tabulators and clocks to today's powerful computers and vast global networks.
IBM helped pioneer information technology over the years, and it stands today at the forefront of a worldwide industry that is revolutionizing the way in which enterprises, organizations and people operate and thrive.
The pace of change in that industry, of course, is
to the 21st or pinpoint – year-by year or decade-by-decade – the key events that have led to the IBM of today. We hope that you enjoy this unique look back at the highly textured history of the International Business Machines Corporation.
About Community Relations
New strategic directions
Over the last ten years, IBM has been one of the largest corporate contributors of cash, equipment, and people to nonprofit organizations and educational institutions across the U.S. and around the world. In all our efforts, we help people use information technology to improve the quality of life for themselves and others.
IBM's contributions target a few key areas and leverage our expertise in technology. In our efforts, we strive to underscore the role of technology as a tool to address societal issues; demonstrate IBM's reputation as a solutions provider; and focus IBM's philanthropic programs to enhance relationships with customers and employees. This policy of strategic investments has benefited communities by bringing IBM experts from all over the world to address their concerns; and has engaged our employees more fully in the important mission of corporate citizenship.
We believe the same information technology innovations
EXIT PATHFINDER
Show Hidden Items
version: 32d
Petr Sedy
SELECT PATH
MANAGE PATHS

FIGURE 12J

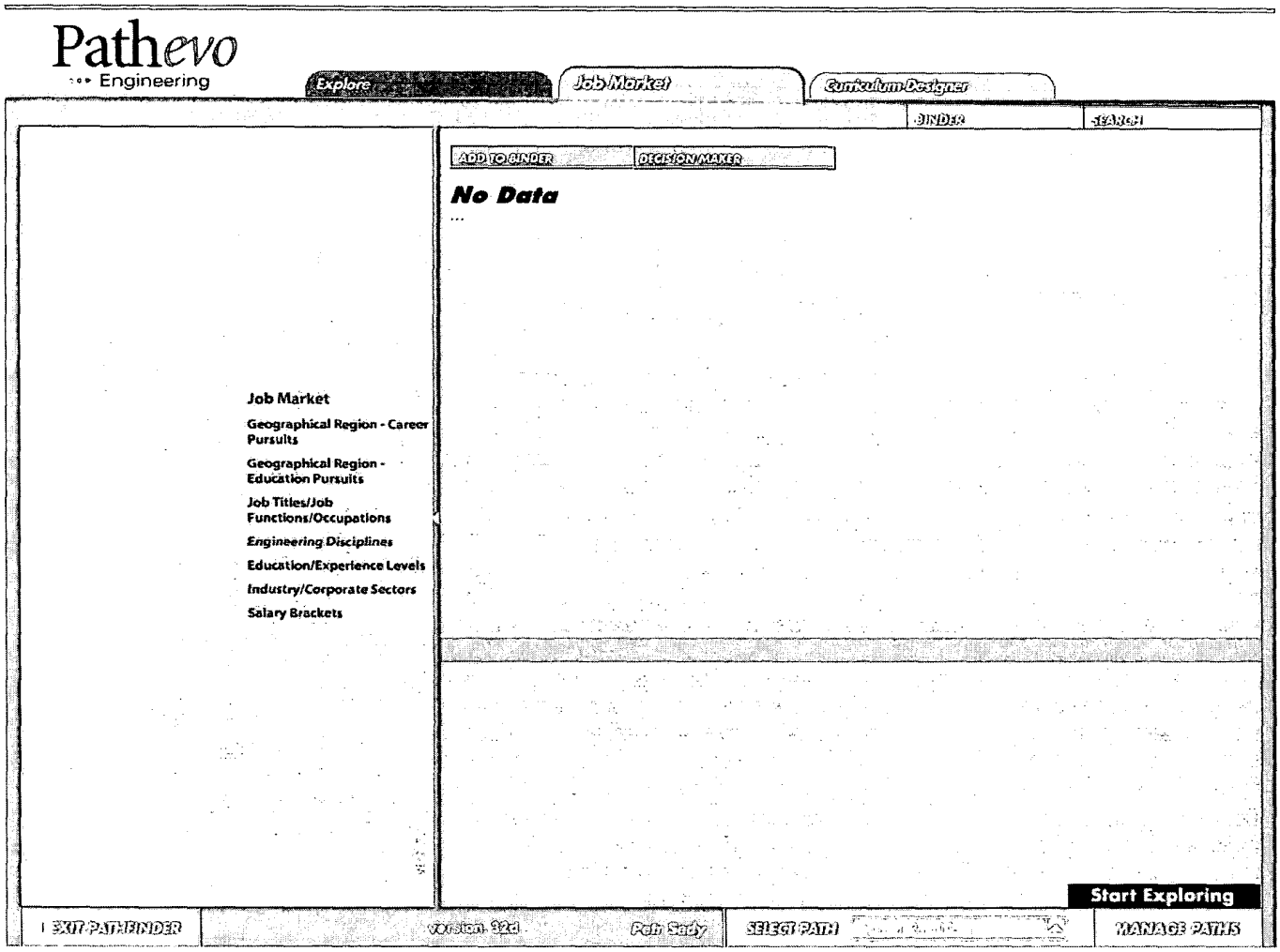

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
BINDER
SEARCH
ADD TO BINDER
DECISION MAKER
No Data
Job Market
Geographical Region - Career Pursuits
Geographical Region - Education Pursuits
Job Titles/Job Functions/Occupations
Engineering Disciplines
Education/Experience Levels
Industry/Corporate Sectors
Salary Brackets
Start Exploring
EXIT PATHFINDER
Version 9.2d
Path Study
SELECT PATH
MANAGE PATHS

FIGURE 12K

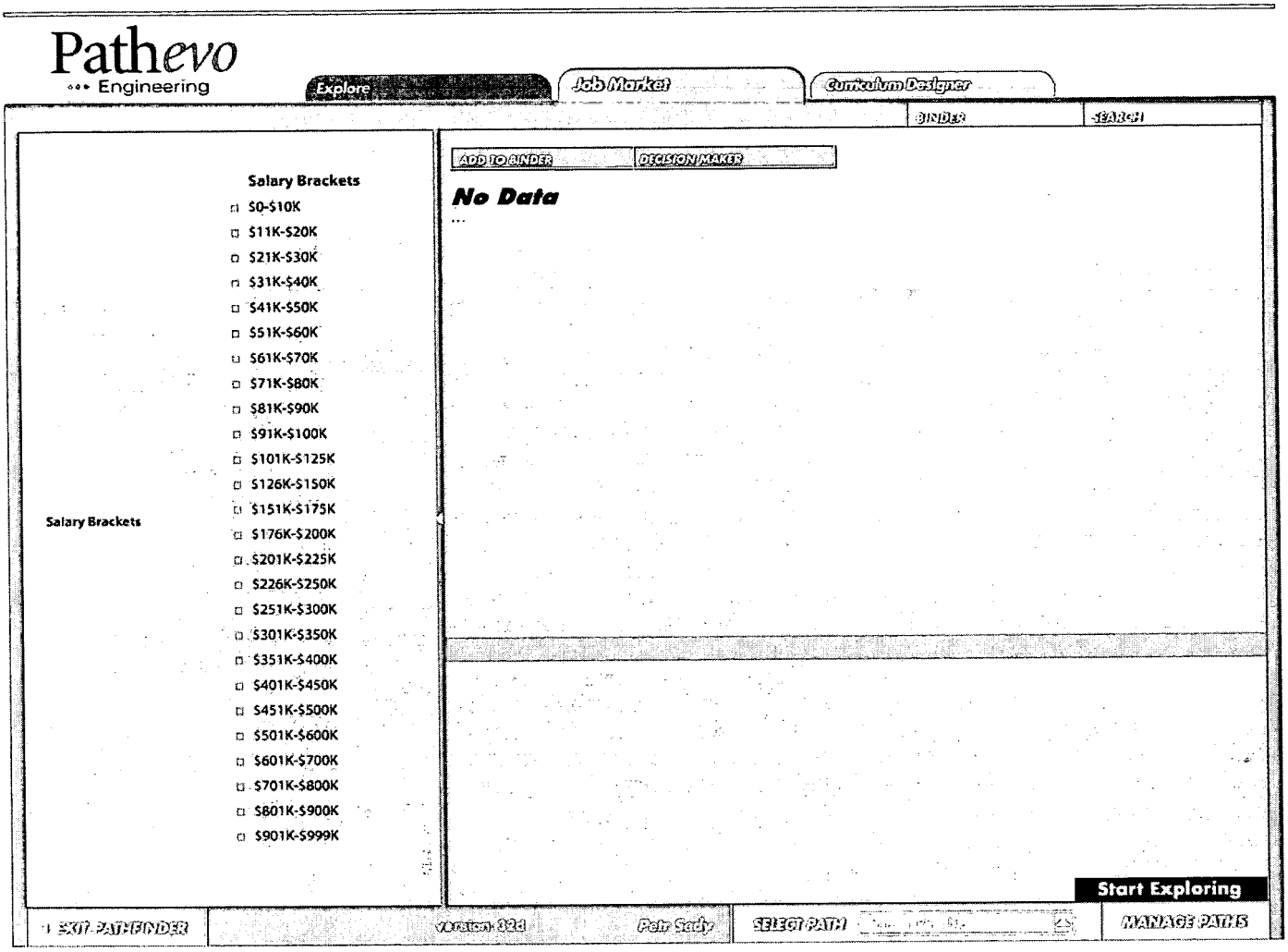

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
BINDER
SEARCH
ADD TO BINDER
DECISION MAKER
No Data
Salary Brackets
$0-$10K
$11K-$20K
$21K-$30K
$31K-$40K
$41K-$50K
$51K-$60K
$61K-$70K
$71K-$80K
$81K-$90K
$91K-$100K
$101K-$125K
$126K-$150K
$151K-$175K
$176K-$200K
$201K-$225K
$226K-$250K
$251K-$300K
$301K-$350K
$351K-$400K
$401K-$450K
$451K-$500K
$501K-$600K
$601K-$700K
$701K-$800K
$801K-$900K
$901K-$999K
Salary Brackets
Start Exploring
EXIT PATHFINDER
Path Study
SELECT PATH
MANAGE PATHS

FIGURE 12L

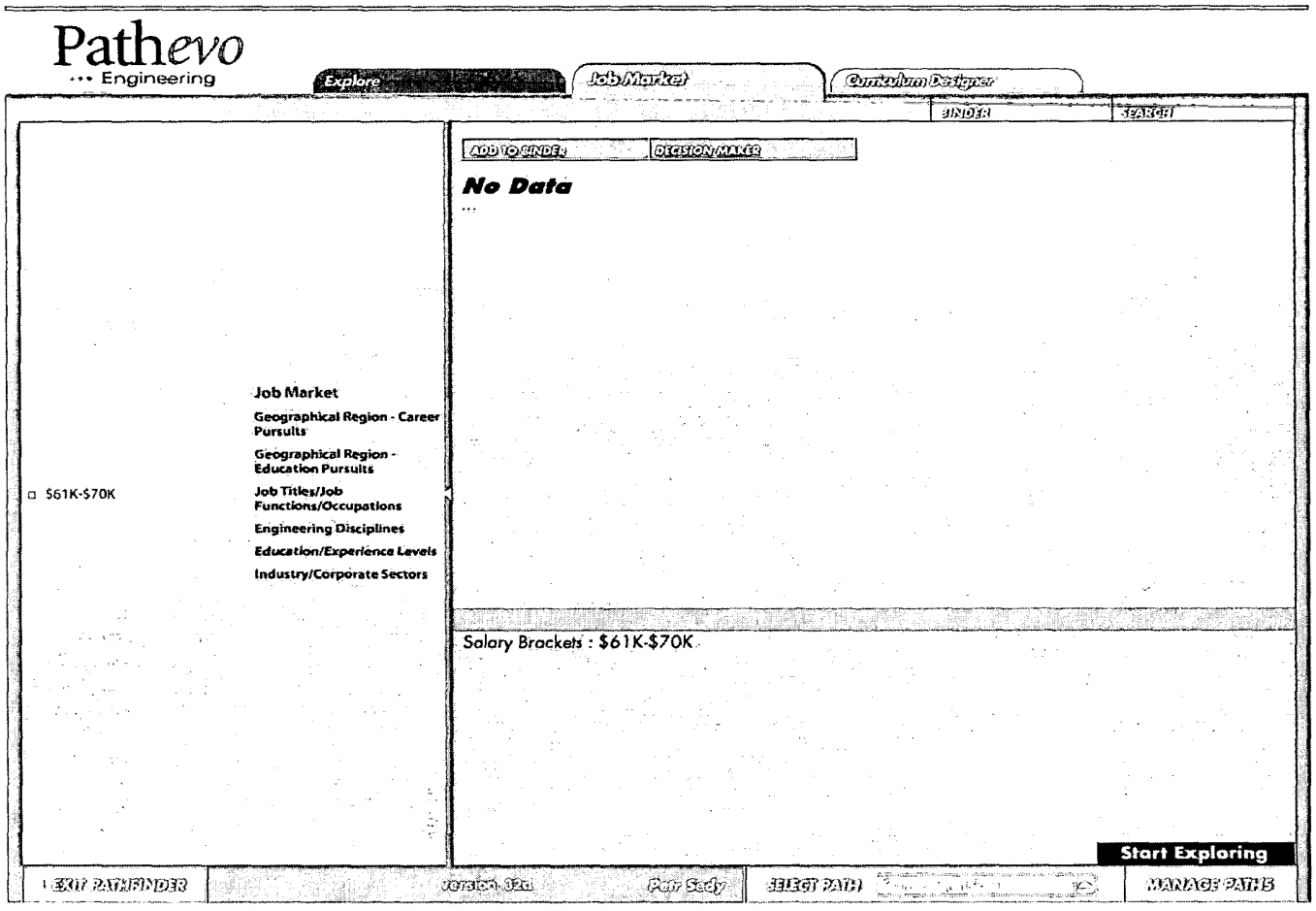

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
FINDER
SEARCH
ADD TO CINDER
DECISION MAKER
No Data
Job Market
Geographical Region - Career Pursuits
Geographical Region - Education Pursuits
Job Titles/Job Functions/Occupations
Engineering Disciplines
Education/Experience Levels
Industry/Corporate Sectors
$61K-$70K
Salary Brackets : $61K-$70K
Start Exploring
EXIT PATHFINDER
SELECT PATH
MANAGE PATHS

FIGURE 12M

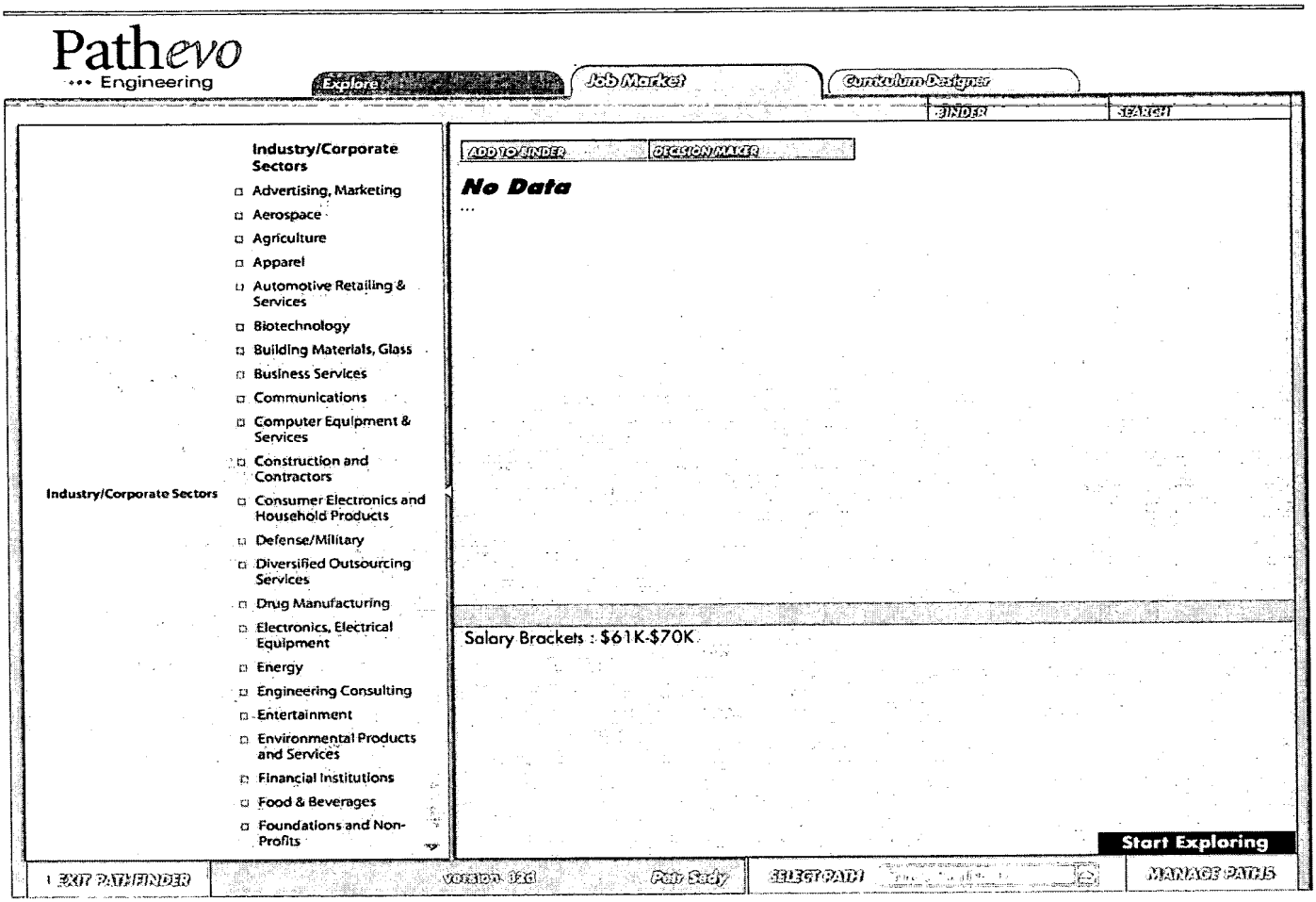

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
BINDER
SEARCH
Industry/Corporate Sectors
Advertising, Marketing
Aerospace
Agriculture
Apparel
Automotive Retailing & Services
Biotechnology
Building Materials, Glass
Business Services
Communications
Computer Equipment & Services
Construction and Contractors
Consumer Electronics and Household Products
Defense/Military
Diversified Outsourcing Services
Drug Manufacturing
Electronics, Electrical Equipment
Energy
Engineering Consulting
Entertainment
Environmental Products and Services
Financial Institutions
Food & Beverages
Foundations and Non-Profits
Industry/Corporate Sectors
ADD TO BINDER
DECISION MAKER
No Data
Salary Brackets : $61K-$70K
Start Exploring
EXIT PATHFINDER
Path Study
SELECT PATH
MANAGE PATHS

FIGURE 12N

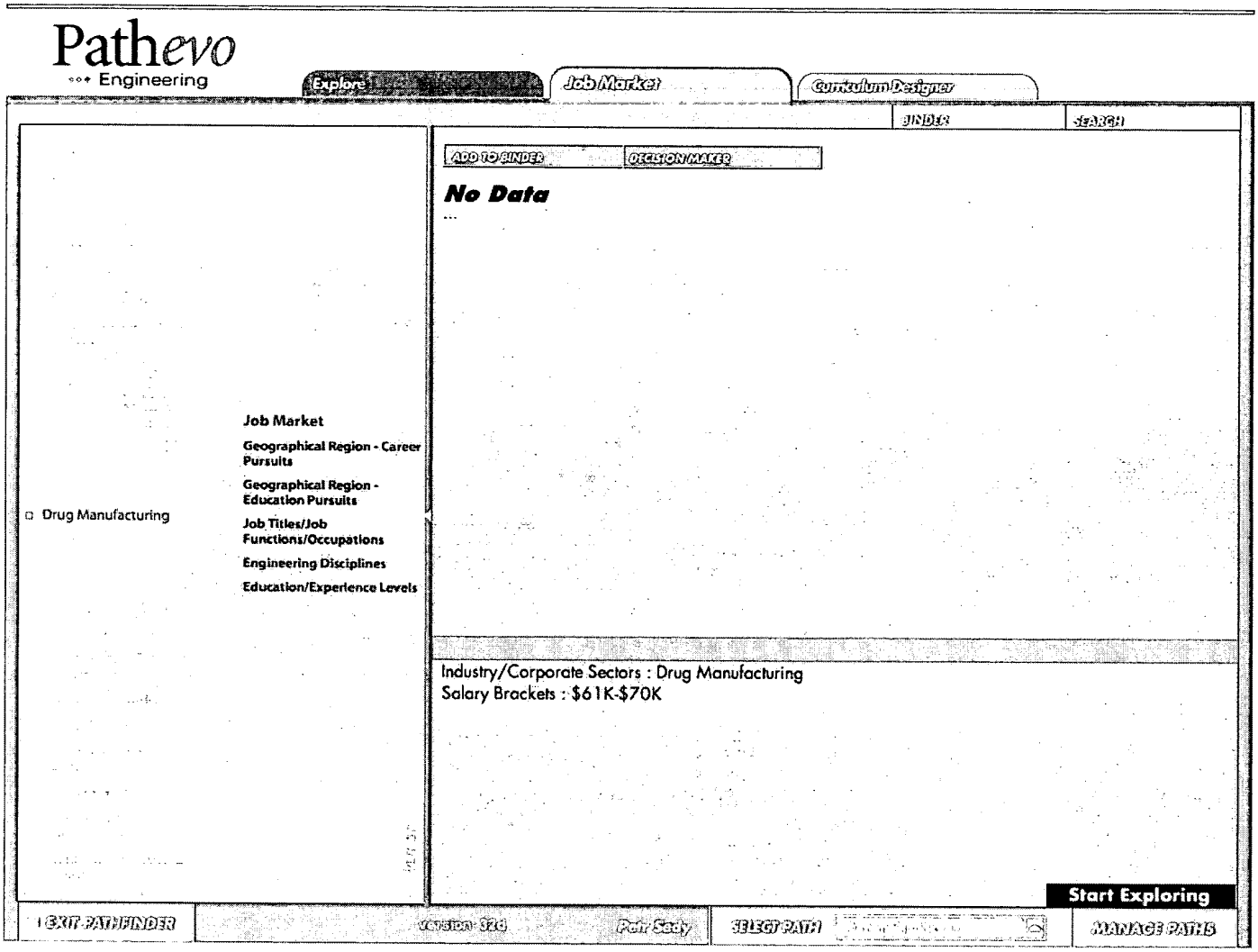

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
FINDER
SEARCH
ADD TO BINDER
DECISION MAKER
No Data
Job Market
Geographical Region - Career Pursuits
Geographical Region - Education Pursuits
Job Titles/Job Functions/Occupations
Engineering Disciplines
Education/Experience Levels
Drug Manufacturing
Industry/Corporate Sectors : Drug Manufacturing
Salary Brackets : $61K-$70K
Start Exploring
EXIT PATHFINDER
Pair Sally
SELECT PATH
MANAGE PATHS

FIGURE 12O

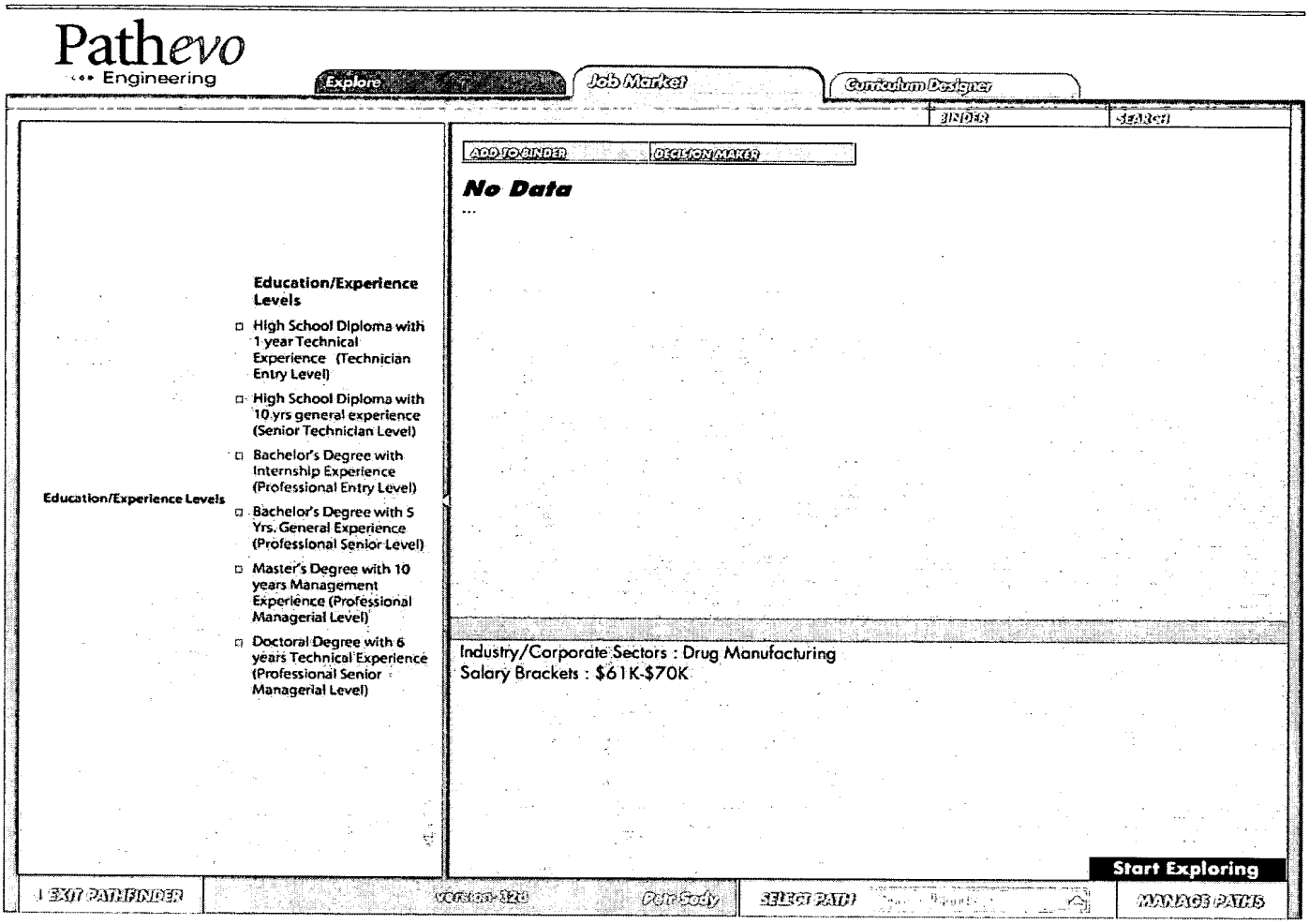

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
BINDER
SEARCH
ADD TO BINDER
DECISION MAKER
No Data
...
Education/Experience Levels
Education/Experience Levels
High School Diploma with 1 year Technical Experience (Technician Entry Level)
High School Diploma with 10 yrs general experience (Senior Technician Level)
Bachelor's Degree with Internship Experience (Professional Entry Level)
Bachelor's Degree with 5 Yrs. General Experience (Professional Senior Level)
Master's Degree with 10 years Management Experience (Professional Managerial Level)
Doctoral Degree with 6 years Technical Experience (Professional Senior Managerial Level)
Industry/Corporate Sectors : Drug Manufacturing
Salary Brackets : $61K-$70K
Start Exploring
EXIT PATHFINDER
Version 3.2.0
Print Study
SELECT PATH
MANAGE PATHS

FIGURE 12P

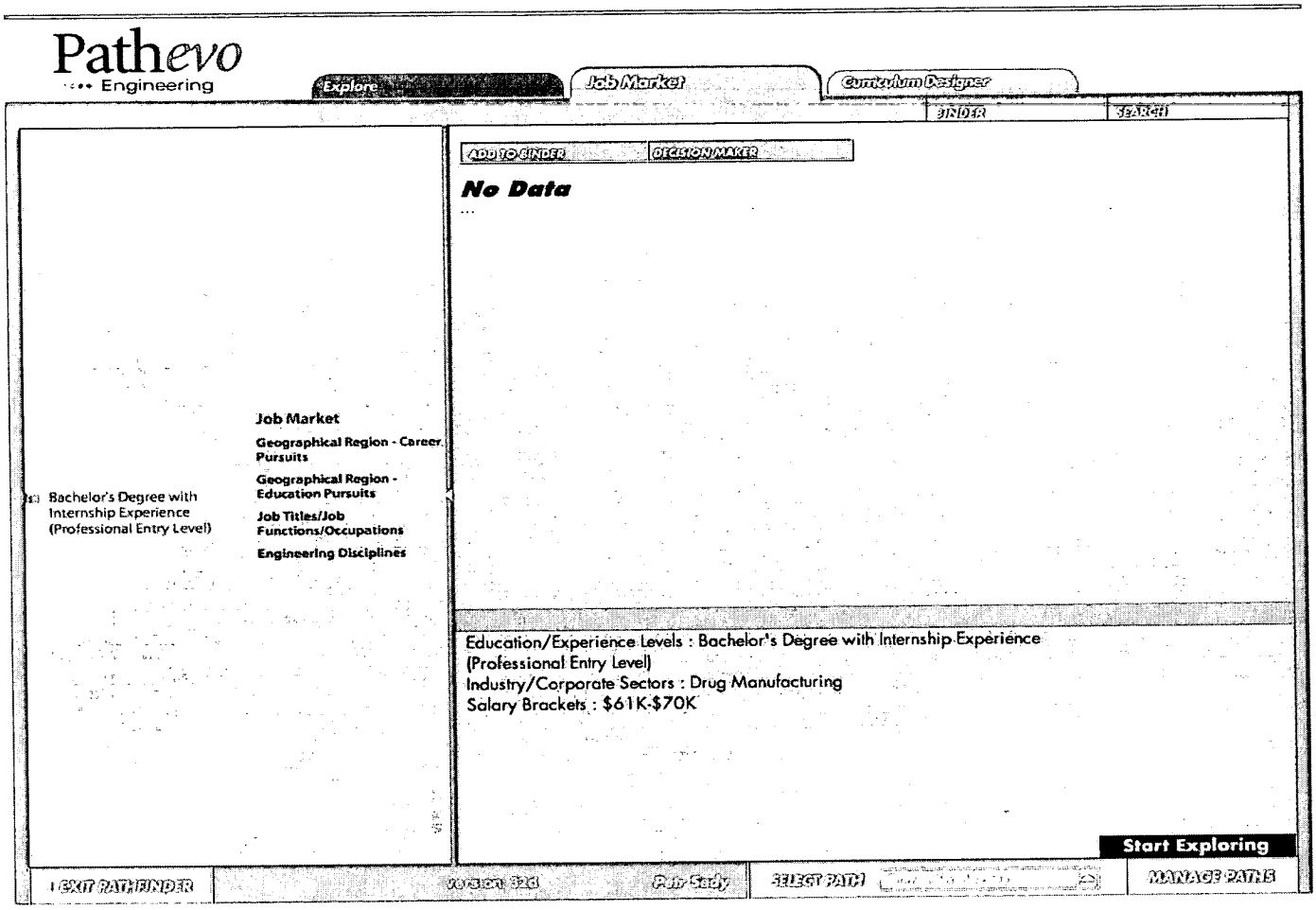

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
FINDER
SEARCH
ADD TO FINDER
DECISION MAKER
No Data
Job Market
Geographical Region - Career Pursuits
Geographical Region - Education Pursuits
Job Titles/Job Functions/Occupations
Engineering Disciplines
Bachelor's Degree with Internship Experience (Professional Entry Level)
Education/Experience Levels : Bachelor's Degree with Internship Experience (Professional Entry Level)
Industry/Corporate Sectors : Drug Manufacturing
Salary Brackets : $61K-$70K
Start Exploring
EXIT PATHFINDER
SELECT PATH
MANAGE PATHS

FIGURE 12Q

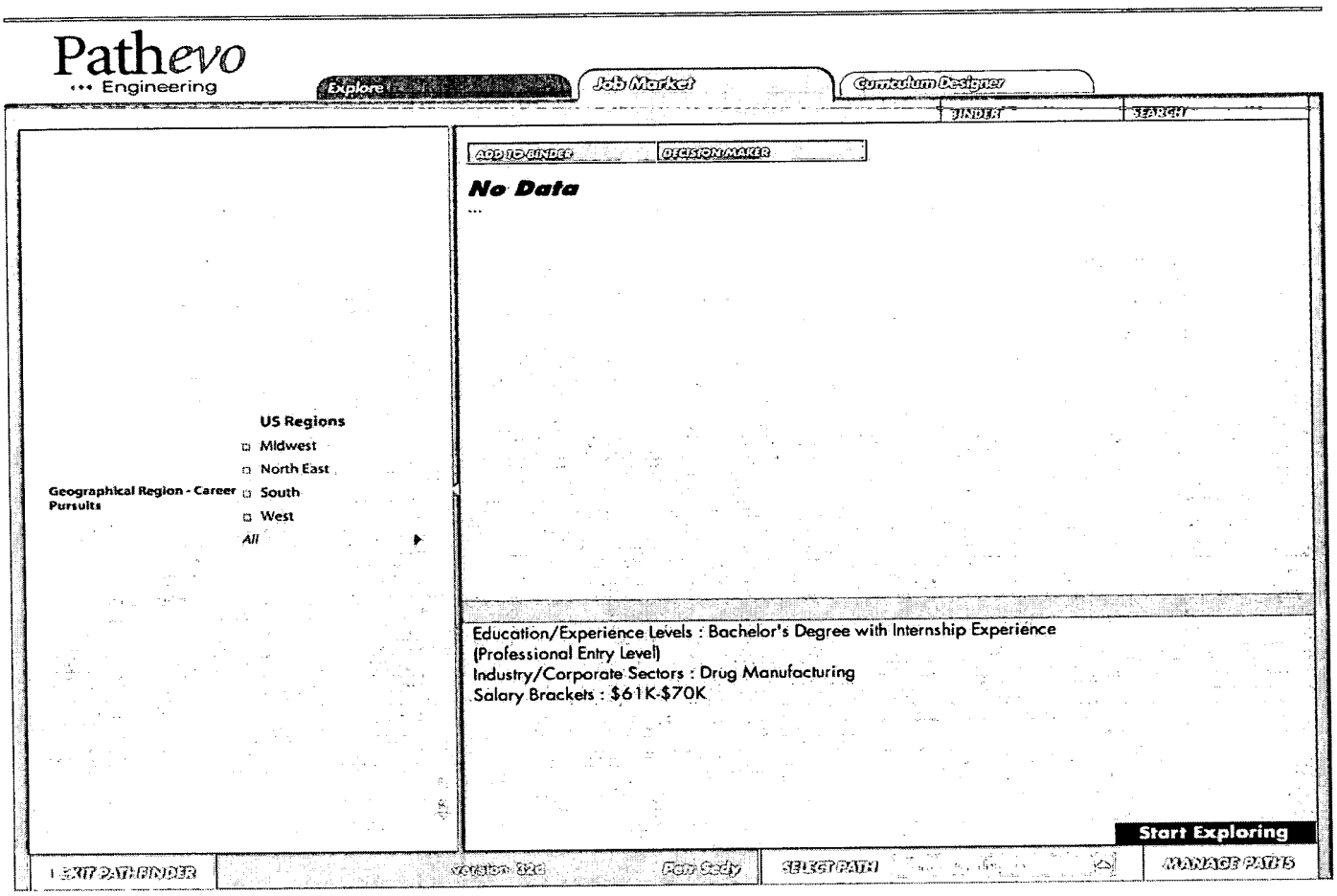

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
FINDER
SEARCH
ADD TO FINDER
DECISION MAKER
No Data
US Regions
Midwest
North East
South
West
All
Geographical Region - Career Pursuits
Education/Experience Levels : Bachelor's Degree with Internship Experience
(Professional Entry Level)
Industry/Corporate Sectors : Drug Manufacturing
Salary Brackets : $61K-$70K
Start Exploring
EXIT PATHFINDER
Version 3.2.6
Pam Seely
SELECT PATH
MANAGE PATHS

FIGURE 12R

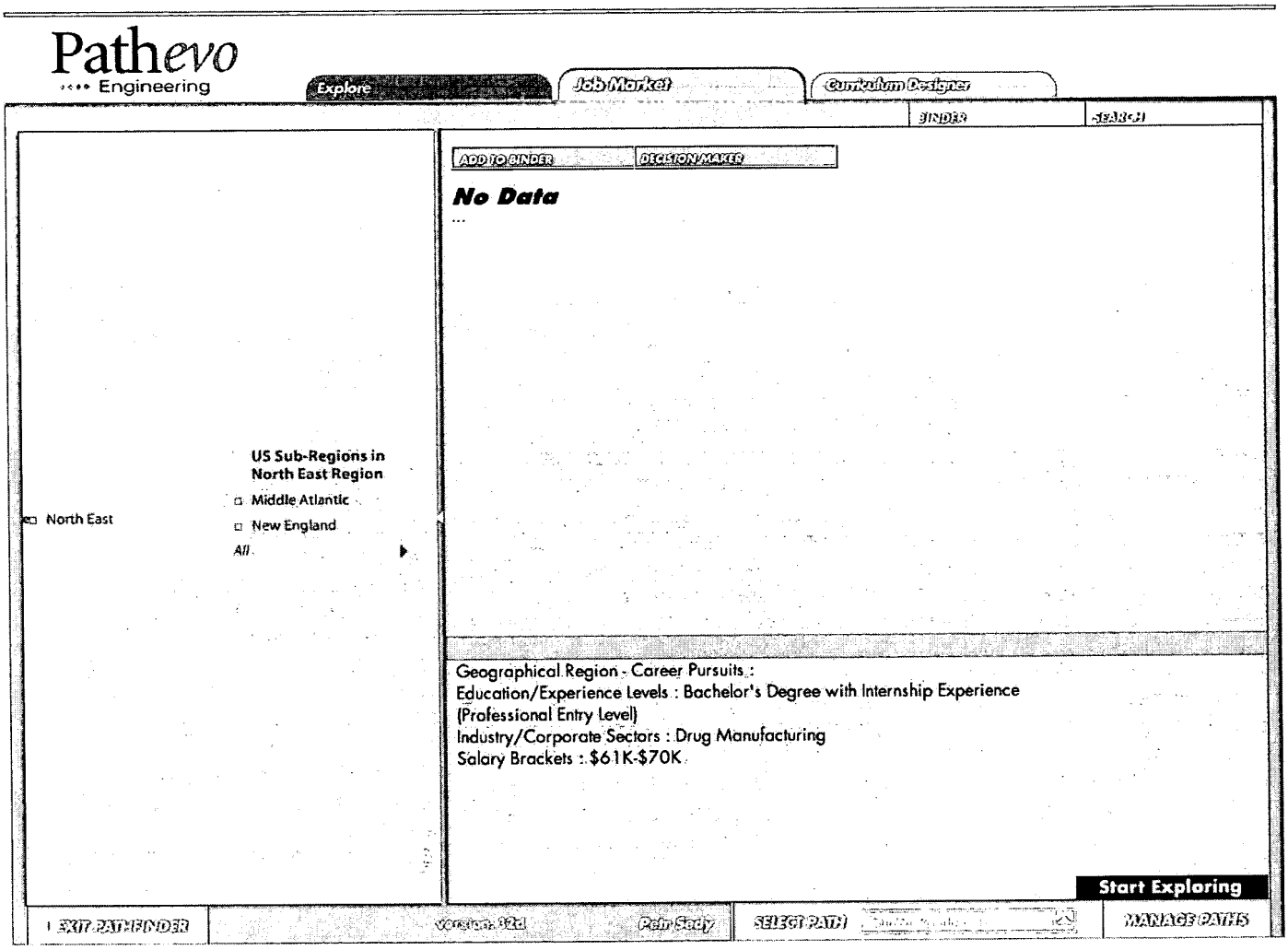

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
BINDER
SEARCH
ADD TO BINDER
DECISION MAKER
No Data
US Sub-Regions in North East Region
Middle Atlantic
New England
All
North East
Geographical Region - Career Pursuits :
Education/Experience Levels : Bachelor's Degree with Internship Experience (Professional Entry Level)
Industry/Corporate Sectors : Drug Manufacturing
Salary Brackets : $61K-$70K
Start Exploring
EXIT PATHFINDER
Path Study
SELECT PATH
MANAGE PATHS

FIGURE 12S

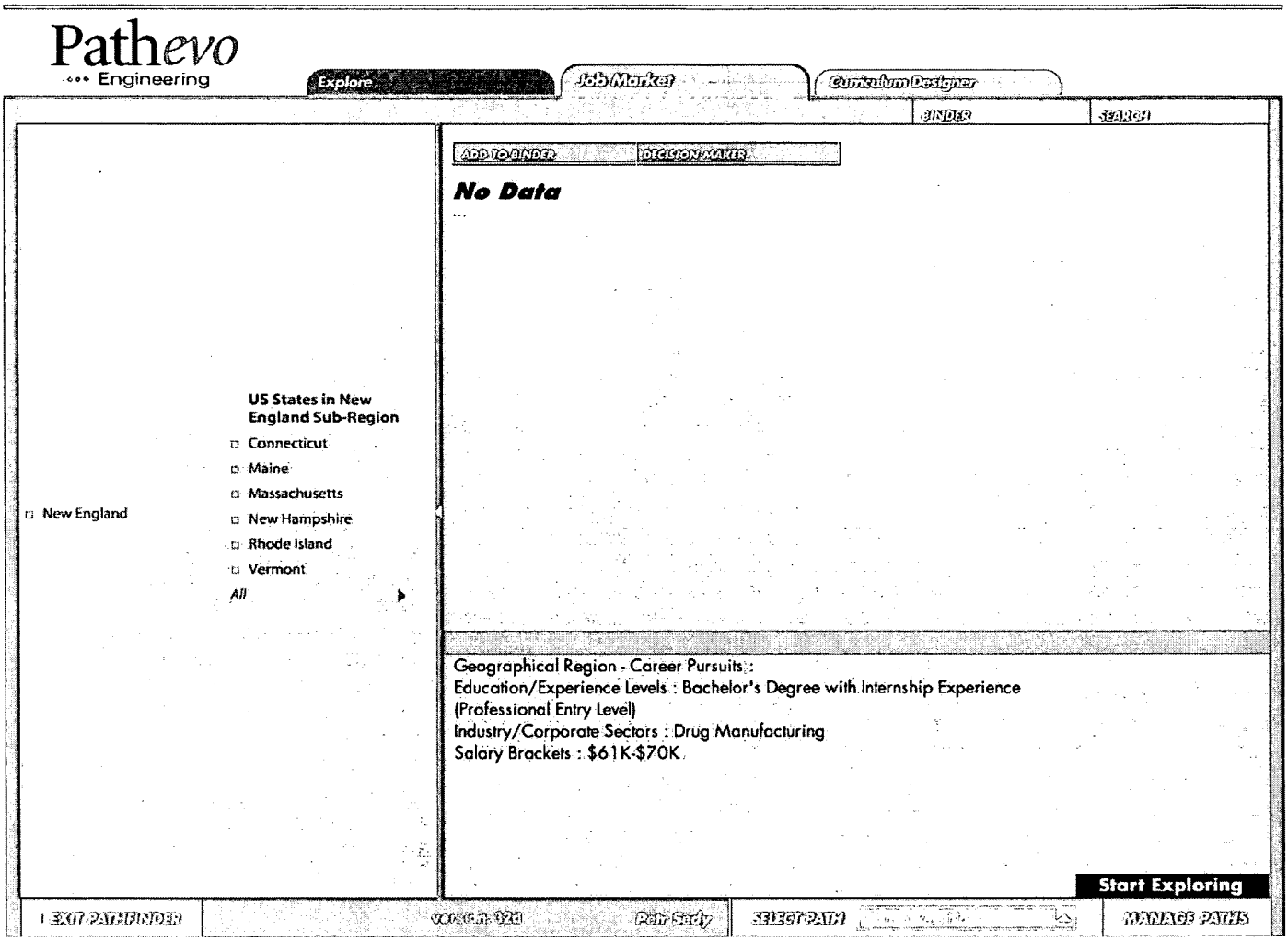

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
BINDER
SEARCH
ADD TO BINDER
DECISION MAKER
No Data
US States in New England Sub-Region
Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont
All
New England
Geographical Region - Career Pursuits :
Education/Experience Levels : Bachelor's Degree with Internship Experience (Professional Entry Level)
Industry/Corporate Sectors : Drug Manufacturing
Salary Brackets : $61K-$70K
Start Exploring
EXIT PATHFINDER
Path Study
SELECT PATH
MANAGE PATHS

FIGURE 12T

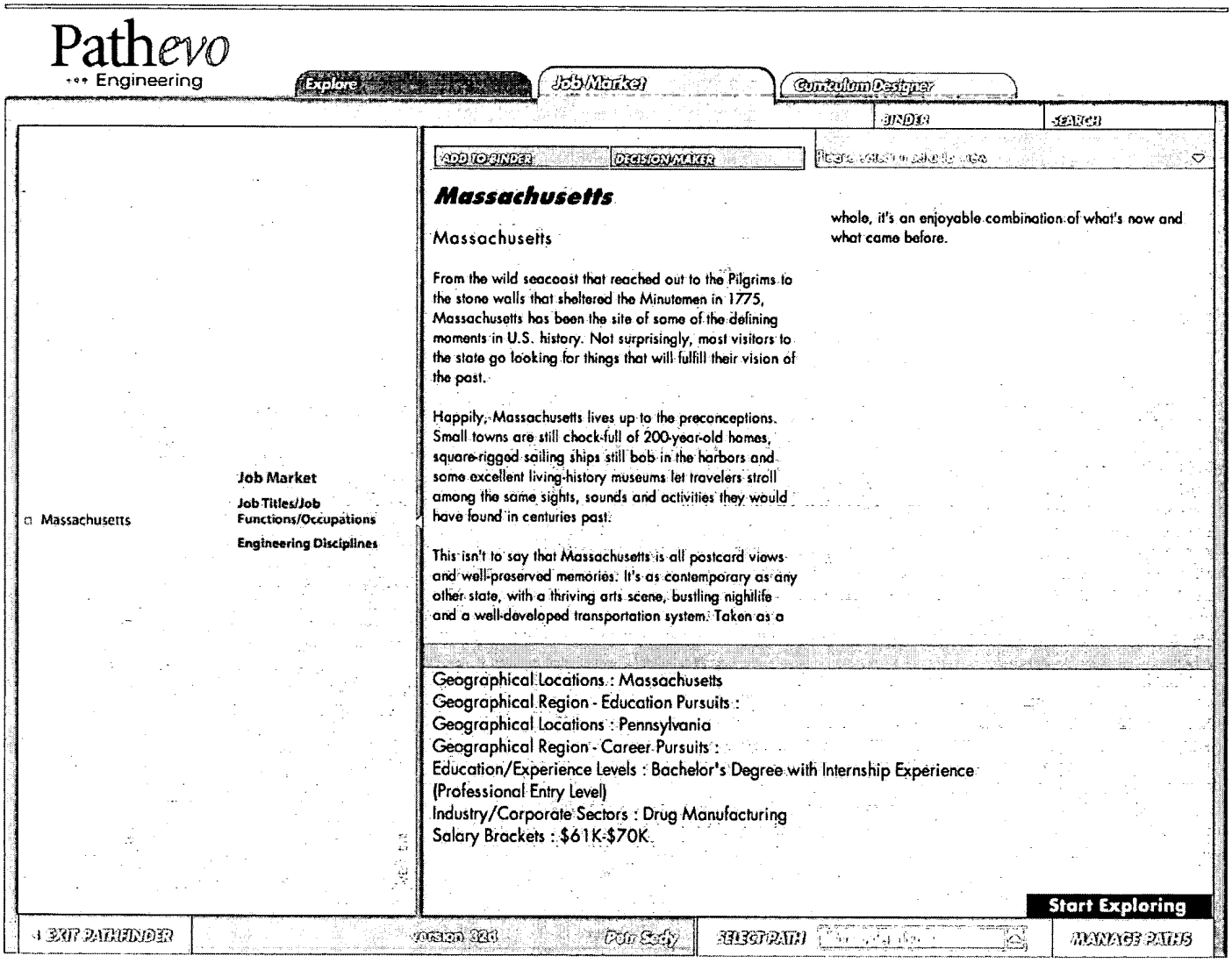
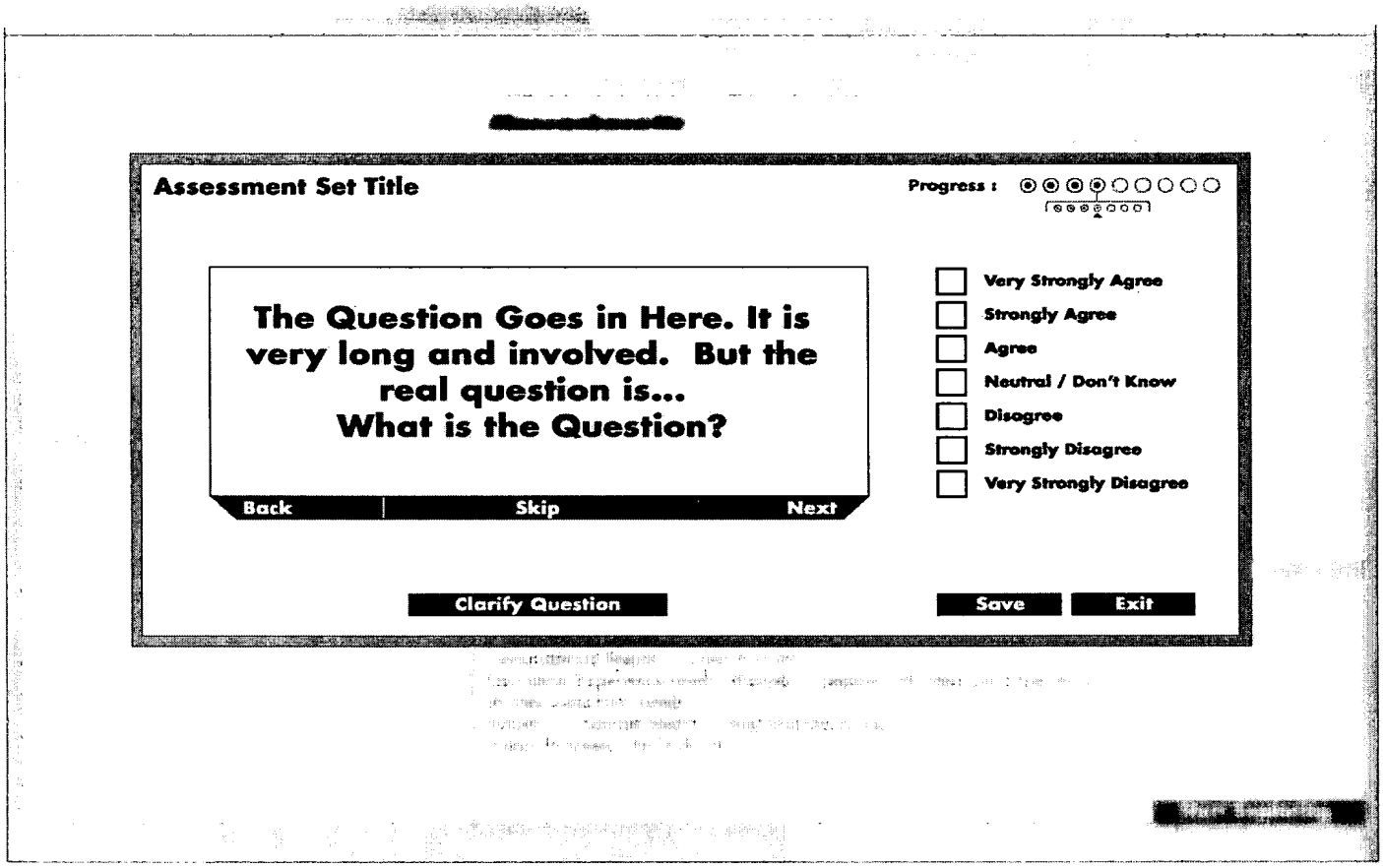

Pathevo
Engineering
Explore
Job Market
Curriculum Designer
BINDER
SEARCH
ADD TO BINDER
DECISION MAKER
Massachusetts
Massachusetts
From the wild seacoast that reached out to the Pilgrims to the stone walls that sheltered the Minutemen in 1775, Massachusetts has been the site of some of the defining moments in U.S. history. Not surprisingly, most visitors to the state go looking for things that will fulfill their vision of the past.
Happily, Massachusetts lives up to the preconceptions. Small towns are still chock-full of 200-year-old homes, square-rigged sailing ships still bob in the harbors and some excellent living-history museums let travelers stroll among the same sights, sounds and activities they would have found in centuries past.
This isn't to say that Massachusetts is all postcard views and well-preserved memories. It's as contemporary as any other state, with a thriving arts scene, bustling nightlife and a well-developed transportation system. Taken as a whole, it's an enjoyable combination of what's now and what came before.
Job Market
Job Titles/Job Functions/Occupations
Engineering Disciplines
Massachusetts
Geographical Locations : Massachusetts
Geographical Region - Education Pursuits :
Geographical Locations : Pennsylvania
Geographical Region - Career Pursuits :
Education/Experience Levels : Bachelor's Degree with Internship Experience (Professional Entry Level)
Industry/Corporate Sectors : Drug Manufacturing
Salary Brackets : $61K-$70K
Start Exploring
EXIT PATHFINDER
version 3.2.6
Pat Sady
SELECT PATH
MANAGE PATHS

FIGURE 12U


Assessment Set Title
Progress :
The Question Goes in Here. It is very long and involved. But the real question is... What is the Question?
Back
Skip
Next
Very Strongly Agree
Strongly Agree
Agree
Neutral / Don't Know
Disagree
Strongly Disagree
Very Strongly Disagree
Clarify Question
Save
Exit